

**SPECIAL STAFF REPORT: New kit releases for 1985**

ICD 08285

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*Paul Budzik's 1/12 scale McLaren M23*



74820 08285



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## TIGER I SR-3502 \$9.98

The TIGER I was the most powerful tank in the world when it was introduced. It weighed over 55 tons. The TIGER was first used in Russia in 1942. Early models sported a 88mm gun and with their heavily armored front were easily the most powerful tank of its period. TIGER's underwent many changes over the years, mainly to cut construction time and costs. Used as a defensive tank, it presented numerous problems to Allied Troops.



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The CHIEFTAIN was developed by the British as a replacement for the Centurion 105. Weighing about 47 tons with a 120mm tank gun mounted and being only 2.75m in height, the CHIEFTAIN became a formidable opponent, rivaled only by the Russian T-10. Possessing speed and maneuverability plus great attacking strength, the CHIEFTAIN has shown itself as a great fighting machine, especially in night combat.



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## CENTURION Mk. 10 SR-3511 \$9.98

Lacking a high performance tank such as the Sherman of the U.S. the British debuted the CENTURION to answer the need for a speedy production tank with good fighting power. Initially the CENTURION was inferior to other tanks of the same class. The CENTURIONS were eventually equipped with 105mm guns and gained widespread fame. In the Middle East in 1967, CENTURIONS formed the main body of the Israeli army, easily destroying T34 and T54 tanks. Their excellent fighting capabilities are known throughout the world.



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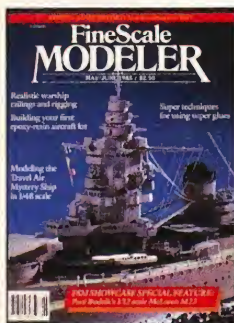
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### ON THE COVER

The only model ever to appear on the cover of FSM more than once (on the Winter 1982 and January/February 1984 issues), Dennis Moore's 1/400 scale Heller *Dunkerque* now graces our cover yet a third time. Dennis and his French battle cruiser are back to explain his techniques for modeling those fine railings and rigging wires, and the story begins on page 30. The dramatic photo is the work of FSM Staff Photographer Paul A. Erler.



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FINESCALE MODELER assumes that such material as letters, club news, news releases, new-product information, etc., is contributed gratis. Feature articles and scale drawings are paid for on acceptance. Photographs accepted separately are paid for upon publication. Leaflets outlining in detail the preparation of features, photographs, and drawings are available on request from the Editorial Secretary. Unsolicited material, if not accepted, will be returned only if postage and wrappings are provided for this purpose. FINESCALE MODELER assumes no responsibility for the safe return of unsolicited material.

# FineScale MODELER

VOL. 3 NO. 3 MAY/JUNE 1985

McLaren M23 (page 18)



### 18 FSM SHOWCASE SPECIAL FEATURE: Paul Budzik's 1/12 scale McLaren M23

A magnificent — and complex — conversion

### 22 Building your first epoxy-resin aircraft kit

Modeling the Leduc 022 in 1/72 scale

H. SCOTT EDWARDS

### 28 From toy to model

Refurbishing an old Dinky Toys 1954 Studebaker

WAYNE E. MOYER

### 30 Realistic warship railings and rigging

Using stretched sprue and brass wire for small-scale details

DENNIS MOORE

### 38 Modeling with cyanoacrylate glues

Super techniques for super glue

LLOYD S. JONES

### 46 22nd Virginia Battalion, Confederate States of America, Civil War, 1862

Number 6 in the AMERICAN DRESS AND DETAIL series R. J. STAFFORD

### 49 German armor terms and abbreviations

What's an "SdKfz," anyway?

BRUCE CULVER

### 54 Modeling the Travel Air Mystery ship in 1/48 scale

Extra details and a smooth paint job improve the Testor/Hawk classic

ROSCOE CREED

## DEPARTMENTS

### 4 Update

### 10 Workbench Reviews

### 13 FSM Looks at New Products

### 17 From the Editor

### 35 FSM Clinic

### 63 Book Briefs

### 66d Videotape Briefs

### 66f Reader Forum

### 68 Tips and Techniques

### 73 Index to Advertisers



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## FSM UPDATE

FSM invites manufacturers and publishers to submit news releases, photos, product samples, and new catalogs. A description of our new-product announcement and review policies is available from FSM Update, FINESCALE MODELER, 1027 North Seventh Street, Milwaukee, WI 53233.

**Kit releases.** Americal/Gryphon, 4373 Varsity Lane, Houston, TX 77004, is offering a 1/72 Kawasaki Ki-32 Mary made by Merlin Models, \$5.25 plus \$1.27 postage.

Heller, 24, rue de Paradis, 75010 Paris, France, has released two new Bobcat kits: No. 3003, 1/72 C-160 Super Transall, and 3514, 1/24 Renault Sports Team.

Available from Northeastern Scale Models, Inc., 99 Cross Street, P. O. Box 425, Methuen, MA 01844, is a half-hull plaque kit of the 1851 racing schooner yacht *America*. The plaque measures 22" x 5 1/4".

Two 1/72 Italeri kits available from the Testor Corporation, 620 Buckbee Street, Rockford, IL 61108-4891, are No. 694, Convaair B-58 Hustler, and 695, Lockheed Hercules "Fat Albert." Testor also has added a Fujimi 1/48 T-38A White Mosquito, kit No. 337, to its line.

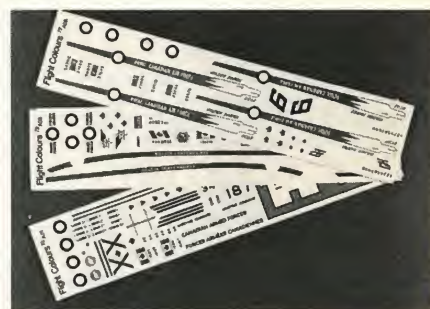
**Decals.** Aeolus Publishing Limited, P. O. Box 2643, Vista, CA 92083, is distributing the latest decals from Detail & Scale which feature formation light panels for F-4 Phantoms, F-14 Tomcats, F-15 Eagles, and F-18 Hornets. Sheet No. 0372 is for 1/144 and 1/72, 0848 is for 1/48, and 0232 is for 1/32.

Krasel Industries, Inc., 919 Sunset Drive, Costa Mesa, CA 92627, has released eight new 1/72 decal sheets in its Microscale line. Sheet No. 72-464 features markings for three SR-71s, "Bodonian Express," "#10," and "The Cat." Sheet 72-465 has three more SR-71s from NASA and the 9th Strategic Reconnaissance Wing, while a colorful CF-104 of the Canadian Armed Forces and an F-104G from West Germany in 25th anniversary markings are on 72-466. Sheet 72-467 has stencil data for F-18 Hornets. F-4 Phantom IIs from Minnesota, Alabama, and Louisiana Air National Guard units are featured on 72-468. Sheet 72-469 contains markings for the new Royal Air Force F-4Js of No. 74 Squadron, and three 25th anniversary aircraft of the West German Air Force: an F-4F of JG 71, F-4F of JBG 35, and RF-4F of AKG 51. Three B-58 Hustlers are the subjects of 72-470: "The Pulaski Hustler," "Greased Lightning," and the Bendix Trophy winner. F-94B Starfires from the Oregon Air National Guard and the 61st, 65th, and 68th Fighter Interceptor Squadrons appear on 72-471.

For 1/48 SR-71s, Krasel offers sheet No. 48-239 with markings for two Blackbirds from the 9th Strategic Reconnaissance Wing. U-2s from the 4080th Strategic Reconnaissance Wing and the Air Force Flight Test Center are on 48-240, and U-2s "City of Sale" and "Smokey Joe" are featured on 48-241. The last operational F-105 from the Georgia Air National Guard and an F-15A from the 318th Fighter Interceptor Squadron are the subjects of 48-242. West German F-4Fs from JBG 35 and JG 71, along with the Royal Air Force F-4Js from No. 74

Squadron, appear on 48-243, while the 25th anniversary RF-4F of AKG 51, West German Air Force, is on 48-244. Sheet 48-245 features an F-104G from JG 34 of the West German Air Force and a CF-104 from the 421 Squadron of the Canadian Armed Forces. Stencil data for F-18A Hornets make up 48-246.

Trident Products, P. O. Box 6201, Postal Station J, Ottawa, ON, Canada K2A 1T3, has released the following 1/72 decals in its



Flight Colors line of Canadian aircraft: No. 72 A01 has Canadian Armed Forces CS2F Trackers in an early scheme, while 72 A02 has CS2F Trackers in the current scheme. Sheet 72 A03 has markings for CHSS-2 Sea Kings in an early scheme, and sheet 72 A04 has Sea Kings in the current scheme. Canadian CL-30 Silver Stars (T-33) of the Golden Centennaires and Snowbirds are featured on 72 A05. Two schemes of the Royal Canadian Air Force Golden Hawks CL-13 (F-86) Sabres are given on sheet 72 A06. Each sheet costs \$3.69.

New dry-transfer sheets from Woodland Scenics, P. O. Box 98, Linn Creek, MO 65052, are No. DT 507, Railroad Gothic, white, \$2.98; DT 508, Railroad Gothic, black, \$2.98; and DT 556, assorted logos and advertising signs, \$4.98.

**Paints and adhesives.** Revell, 4223 Glencoe Avenue, Venice, CA 90292, has introduced Quick Color Enamel Paint Markers in 12 gloss and metallic colors.

**Figures.** Available from Artistic Enterprises, 9 Winston Crescent, Whitby, ON, Canada LIN 6Y3, are 25 mm Greek City States Hoplites and Auxiliaries sculpted by Julian Benassi. They are priced at (U. S.) 45 cents unpainted and \$2.00 painted; add 10 percent for postage. Also offered are Clyde-cast Miniatures' 25 mm 150-piece Napoleonic armies of Britain and France for \$50.00 unpainted and \$300.00 painted per army.

Six plastic 1/12 knight-in-armor kits from Imai are being offered by Minicraft Models, Inc., 1510 West 228th Street, P. O. Box 3577, Torrance, CA 90510. Available are No. B-1392, Elector Frederick I; B-1393, Archduke Siegmund of Austria; B-1394, Archduke Ferdinand II of Austria; B-1395, Emperor Maximilian II; B-1517, Phillip, Count of Hessen; and B-1518, Elector Otto Heinrich. The price is \$4.00 each.

Three sets of 1/32 figures from the 2nd Boer War, 1899, have been added to the line at Quartermaster Corps, P. O. Box 908, Buckingham, PA 18912: Set No. 17 contains six dead and wounded figures of the British infantry and Boers, \$57.00; No. 18 contains six dead and wounded figures of the British 1st Highland Light Infantry and Boers,



\$60.00; and No. 19 contains six dead and wounded figures of the British 2nd Cameronians and Boers, \$60.00. Also new is set No. 20, six 1/32 figures of the British 24th Foot, Zulu War, 1879. Add \$2.00 per set for shipping.

Rafm Company, Inc., 19 Concession Street, Cambridge, ON, Canada N1R 2G6, has added 12 figures to its "Custom Character" line: product No. CC-13, Ranger; CC-14, Monk; CC-15, Paladin in plate armor; CC-16, Female thief; CC-17, Armored female fighter; CC-18, Crusader in chain mail; CC-19, Assassin Ninja; CC-20, Evil sorcerer; CC-21,



Gladiator; CC-22, Wood elf; CC-23, Goblinoid champion; and CC-24, Barbarian in leather and fur. Each 25 mm figure sells for \$2.25; add \$2.00 per order for postage.

Tiny Troopers, 19 Langton Road, Boscombe, Bournemouth BH7 6HS, England, has released product No. T. T./CR6, a 65 mm mounted trooper of the 13th Light Dragoons, Crimean War. The next release planned is a 90 mm Cromwellian Trooper of Horse. Tiny Troopers' figures are available in the U. S. from The Hobby Chest, 8808 Bronx, Skokie, IL 60077, and The Soldier Centre, P. O. Box 38, West Roxbury, MA 02132.

**Accessories and diorama materials.** Styrene rod, styrene tube, and wing struts are among the products available from Contrail Model Aircraft, Sutcliffe Productions, The Orchard, Westcombe, Shepton Mallet, Somerset BA4 6ER, England. Send \$1.00 for a catalog and price list.

New from D. G. Modelling Products, 8080 Langdon Avenue, Van Nuys, CA 91406, is SuperTube stainless steel tubing. Sizes include (all are interior diameters) .004" (1/72 .30-cal. barrels); .007" (1/72, .50-cal.); .006" (1/48, .30-cal.); .011" (1/48, .50-cal.); .009" (1/32, .30-cal.); and .017" (1/32, .50-cal.). Each piece is 4" long. SuperTube is available only in retail stores; the suggested price is \$5.79 for a package of six.

**Tools.** Blazer Products, P. O. Box 1019, New York, NY 10021, is offering a self-starting, piezoelectric, hand-held, refillable micro torch, product No. GB2001.

For a description of dental tools offered by Huckleberry Finn, write to P. O. Box 305, Gold Hill, OR 97525-9998. This mail-order firm sells dental tools that are factory seconds or factory surplus.

Jarmac, Inc., P. O. Box 2785, Springfield, IL 62708, has introduced the Sander-Plus. Using the Jarmac 4" Tilt Table Disc Sander as a base tool, a motor shaft extension now accommodates additional attachments such as polishing discs, sander discs, and scroll tools. The suggested retail price of model 5050 is \$99.50; add \$3.50 for postage and handling if ordering from Jarmac.

Moody Tools, Inc., 42-60 Crompton Avenue, P. O. Box 230, East Greenwich, RI 02818, is offering a 12-piece Torx driver set,



No. 58-0212, as part of its Acu-Min line of miniature hand tools. The suggested retail price is \$21.25.

**Catalogs.** Available for \$2.00 from Architectural Model Supplies, Inc., 115-B Bellam Boulevard, P. O. Box 3497, San Rafael, CA 94902, is an illustrated, 36-page model-builders catalog. It lists construction, finishing, and landscaping materials.

The 1985 kit, decal, and postcard catalog from ATP Incorporated, 3014 Abelia Court, San Jose, CA 95121, sells for \$1.00.

Scenery Unlimited, 310 Lathrop Avenue, River Forest, IL 60305, has released a 52-page 1985 catalog. The catalog, \$3.00 postpaid, lists 1/64 model parts, tools, vehicles, decals, scenery aids, figures, and detail parts.

The fall/winter 1984 aircraft, armor, auto, and ship catalog from Select Hobby Supplies, P. O. Box 723, Glastonbury, CT 06033, sells for \$2.00.

**Industry news.** Aeolus Publishing Limited, P. O. Box 2643, Vista, CA 92083, announced that it has acquired the right to use the name Scale-Master and to manufacture and distribute Scale-Master products. There are 29 aircraft decal sets in the Scale-Master line, with additional sets planned.

**Miscellaneous.** The Armchair Sailor Bookstore, Lee's Wharf, Newport, RI 02840, has published a free update to its descriptive bibliography of in-print marine books and videotapes.

The Base Camp, 33 Sheridan Avenue, Metuchen, NJ 08840, is offering a list of new products, sample base, and coupons for \$3.00.

Plans for the U. S. S. Iowa BB61 in 1/16" = 1' scale (item No. TFW-8) are available from the Floating Drydock, c/o General Delivery, Kresgeville, PA 18333, for \$20.00; a mailing tube and shipping are extra. These plans show the ship as it looked in October 1984. The Floating Drydock also sells items such as books, fittings, paints, tools, and photographs for ship modelers. Send \$1.50 for a catalog.

New from Helmet Products, Betchworth, Surrey RH3 7AH, England, are two 1/200 die-cast metal models of the Mk I and Mk IX Spitfire. Unpainted aircraft are priced at £1.50 (approximately \$1.65), while models with an authentic factory camouflage scheme and wing decals are priced at £3.60 (approximately \$3.95). Unpainted undercarriage legs sell for 35 pence each (approximately 40 cents). Add 25 percent for overseas postage.

Hobbypoxy Products, division of Pettit Paint Company, Inc., 36 Pine Street, P. O. Box 378, Rockaway, NJ 07866, recently introduced Fast Fill grain filler, product No. H15. Hobbypoxy says this single-component, air-drying grain filler is compatible

More FSM Update on page 9

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2	Bereznyak-Isaev BI WWII Soviet rocket fighter	3.95	
3	Blöhm & Voß BV-40 WWII armoured glider fighter	3.95	
4	Lavochkin LaGG-3 WWII Soviet fighter	5.95	
5	Messerschmitt ME-163A WWII rocket research fighter	5.95	
6	Avia BH-21 1925 Czech biplane fighter	5.35	
8	Beriev KOR-1 (Be-2) 1937 Soviet seaplane	6.95	
9	DFS 194 1940 pre-Me 163 research rocket aircraft	5.95	
10	Polikarpov R-5 1928 Soviet bomber biplane	6.95	
11	Aero A300 late '30s Czech twin engine bomber	8.95	
12	Avro Canada Arrow CF-105 (decals available)	12.95	
13	Me 109 I-270, Z 1946 Soviet rocket fighter	5.95	
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	Mikro PZL A/B Los bomber (2 versions)	11.95	
	Mikro YaK1/IM (2 versions), Czapla each kit	4.45	
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## An FSM Staff Report

# 1985 New Kit Releases

This special report was compiled from information provided by manufacturers, distributors, and importers. A few companies are importing foreign kits under their own label; some of these may not be "new" to the modeler. Prices and release dates are projected and subject to change. Catalog prices, when listed, include postage.

### AIRFIX

The Palitoy Co., Owen Street, Coalville, Leicestershire, England

1/48 Tornado F2 ADV  
1/72 Martin B-57B  
1/72 AC-130H Gunship

### AIRMODEL

Frank-Modellbau, D-7470 Albstadt 1, (Ebingen) Ob. Vorstadt 21, West Germany

Vacuum-formed aircraft kits, catalog, \$2.00

1/72

40 re-releases including:

Polikarpov I-15/I-15 bis

XF-91 Thunderceptor

BT-13 Valiant

Ryan X-13

Lockheed XFV-1

Antonov An-2

Dornier Do 317

Northrop XP-56 Black Bullet

Commonwealth CA-1 Wirraway

### C. A. ATKINS

17 Ashbourne Avenue, Bridlington YO16 4PE, England

White metal aircraft kits

1/72

Piper J3 Cub

Short Crusader Schneider Trophy aircraft

Prototype Hawker Hurricane

### BLUEJACKET SHIPCRAFTERS

93 Canal Street, Shelton, CT 06484

Catalog, \$2.00

T-2 Tanker, 1/16" = 1', Aug.

C. S. S. *Albamarle*, 3/16" = 1', Sept.

### COMBAT MODELS

400 3rd Street, West Easton, PA 18042

Vacuum-formed kits, catalog, \$3.50

1/48 aircraft

Sunderland

P2V-7 Neptune

1/32 aircraft

TBF Avenger

P-80 Shooting Star

XP-55 Ascender

F7U-3 Cutlass

1/72 ships

SSN *Skipjack*

German WWI U-35

### CONTRAIL MODEL AIRCRAFT

Sutcliffe Productions, Westcombe, Shepton Mallet, Somerset BA4 6ER, England

Vacuum-formed aircraft kits, catalog, \$1.00

1/72

Miles Monitor

Sukhoi Su-2

Ilyushin DB-3 and IL-4

Tupelov Tu-16 Badger

Yakovlev Yak-25 (3 versions)

Yakovlev Yak-28 (2 versions)

Handley Page Hyderabad and Hinaldi

A. V. Roe Manchester (full kit)

### EAGLES TALON

P. O. Box 156, Sun Valley, CA 91352

Vacuum-formed aircraft kits

1/72

Ryan FR-1 Fireball

Ryan F2R Darkshark

Vought F8U-3 Crusader III

1/48

Arado Ar 234

### EMPIRE PACIFIC

10805 East Artesia Boulevard, Cerritos, CA 90701

Empire Pacific imports several lines of Japanese kits.

**Aoshima**

1/16 1918 vintage bicycle, Mar., \$9.98

**Arii**

1/24 Lamborghini Jota, Jan., \$7.98

1/24 Pantera GTS, Jan., \$7.98

**Gunze Sangyo**

1/24 BMW Isetta, Apr.

**LS**

1/144 Northrop F-20 Tigershark, Apr., \$2.50

1/24 Tires and accessories (4 sets), Feb., \$3.00 ea.

**Otaki**

1/12 Honda 5800, Feb., \$44.95

### ERTL/AMT

Highways 136 & 20, Dyersville, IA 52040

1/25 autos

Orange Blossom Special, Mar., \$7.50

Bigfoot, Mar., \$10.00

Tennessee Thunder, Mar., \$7.50

'86 Corvette, \$6.50

Junkyard Dog truck, \$14.00

1/16 autos

T-Bird, Cale Yarborough, Aug., \$14.75

T-Bird, Kyle Petty, Aug., \$14.75

Pontiac, Richard Petty, Aug., \$14.75

Pontiac, Tim Richmond, Aug., \$14.75

### ESCI

Via Torino 15/19, 20063 Cernusco sul Naviglio, Milano, Italy

1/72 aircraft

Panavia Tornado IDS

CF-18

F-100D (Turkey, France)

F-16A (U. S., Turkey)

F-4F (Toned-down)

CF-104 "Indian"

1/48 aircraft

F/A-18 Hornet

Mirage III EA/EO (Argentina, Australia)

Mirage 2000

"Sandy" A-1

Target Tug AD-4

C. A. N. A. MB 326/H RAN

1/24 autos

Calberson R5 Rally

Würth M1 BMW

450 SLC Paris-Dakar Runner

1/72 armor

White M3 Scout Car

### EXECUFORM

721 North Prospect Avenue, Redondo Beach, CA 90277

Vacuum-formed aircraft kits

1/72

Vultee BT-13, Mar., \$5.75

Convair 240 family, July, \$10.50

Hughes XF-11, Nov., \$13.50

### FALCON

P. O. Box 10-213, Wellington, New Zealand

Vacuum-formed aircraft kits

1/72

Triple conversion kit III — E-1 Tracer, F9F-8P Cougar,

AP-2H Neptune, Feb.

### HELLER

Polk/Heller, 346 Bergen Avenue, Jersey City, NJ 07304

Heller catalog, \$3.95

**Bobkit (formerly Bobcat) range**

1/24 Renault G260 Turbo truck, Apr., \$13.95

1/60 Wabco scraper, Apr., \$9.95

1/72 Transall Postal, May, \$9.95

1/32 Volvo Globetrotter and semi, May, \$17.95

1/24 Renault R5 Turbo, June, \$9.95

1/32 GMC Thunderblack van, June, \$5.50

1/32 Volvo F12.20, June, \$10.95

1/32 Semi, June, \$10.95

1/72 F-16 Fighting Falcon, Aug., \$5.95

1/32 Jeep CJ-7, Aug., \$5.95

1/32 GMC Dallas Police van, Aug., \$5.95

1/72 Super Tiger helicopter, Aug., \$5.50

1/72 Super Puma with Exocet, Oct., \$5.50

1/24 Peugeot 205 Turbo, Oct., \$9.95

1/72 Commando equipment and figures, Oct., \$5.50

1/72 Airport equipment and figures

1/32 Jeep CJ-7 Renegade

1/72 aircraft

Nord 2502 Noratlas UAT, Feb., \$12.95

Mirage F1CR, Mar., \$6.50

L-1049 Super G Constellation, May, \$12.95

C-118 Liftmaster, July, \$12.95

Boeing 707-320, Nov., \$24.95

1/48 aircraft

AS 350 Ecureuil Gendarmerie helicopter, Mar., \$5.50

1/35 aircraft

Super Frelon with Exocet, July, \$29.95

1/24 autos

Citroën B-14 Normande, Feb., \$13.95

McLaren M7A, May, \$12.95

Renault R8 Gordini, May, \$12.95

Renault Alpine A210, June, \$12.95

1/16 autos

Citroën DS19 Cabriolet, June, \$29.95

1/35 armor

Somua S35, Feb., \$8.50

AMX 13/155 and VCA

### HERITAGE SHIPBUILDERS

P. O. Box 494, Lathrup Village, MI 48076

Wood and vacuum-formed ship kits, catalog, \$1.00

Whaleback freighter *Washburn*, 1/16" = 1', Jan., \$79.00

Lumber hooker *Charles H. Bradley*, 1/16" = 1', Mar.,

\$69.00

Whaleback passenger ship *Christopher Columbus*, 1/16" =

1', July, \$99.00

Self-loader freighter, 1/32" = 1', Aug., \$79.00

### HUMA-MODELL

Kilianstädter Strasse 9, 6450 Hanau 6, West Germany

Injection-molded aircraft kits

1/72

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233 East Ellis Avenue, Libertyville, IL 60048

Vacuum-formed aircraft conversion kits

1/48

P-38E, F-5E (Recon. P-38), Droop Snoot, \$6.95

Fokker D. VIII, \$8.95

Sopwith Triplane, \$9.95

Douglas A-20 Havoc (multi-version), \$20.95

### KPL MODELS

703 Cannon Road, Silver Spring, MD 20904

Vacuum-formed aircraft kits, catalog, SASE

1/72

Fiat CR.25 bis, Jan., \$7.95

CA. 11 Woomera, Mar., \$7.95

Amiot 354, Mar., \$7.95

Saab-18, Apr., \$7.95

Imam Ro.58, Aug., \$7.95

CA. 331B Raffica, Dec., \$7.95

### L. D. M.

37 Crewes Avenue, Warlingham, Surrey CR3 9NZ, England

White metal aircraft kits, catalog, 2 IRCs

1/48

D. H. 82A Tiger Moth, Jan., \$28.00

Clerva C.30A Autogiro (revised), Aug., \$19.00

Pitts SI-S (revised), Oct., \$19.00

### LINDBERG

P. O. Box 880, 191 West Carpenter, Wheeling, IL 60090

1/24 autos

Mustang DE-4, \$5.75

Corvette TC-8, \$5.75

Camaro Kammback, \$5.75

Firebird Sportwagon, \$5.75

**Ships**

1/64 *Southern Belle*, May, \$10.00

1/96 *Fulton's Clermont*, May, \$10.00

1/124 Civil War Blockade runner, May, \$10.00

### MINICRAFT

(including Hasegawa)

P. O. Box 3577, Torrance, CA 90510

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1/16 aircraft

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1/32 aircraft

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F-15E Strike Eagle, \$30.00  
F-15C Eagle, \$25.00  
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Ground equipment, \$8.50  
1/72 aircraft  
F-16A (block 15), \$7.00  
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#### 1/200 aircraft

ANA 747, \$12.00  
Sudjal 747-300, \$12.00  
Big Top 747-300, \$12.00  
Space Shuttle, \$8.50  
Space Shuttle with boosters, \$18.00

#### Minicraft (new line)

1/144 Tu-22M Backfire B, \$8.00  
1/72 Super Etendard, \$6.00  
1/48 AH-1G HueyCobra, \$4.50  
1/48 UH-1B Tow Huey, \$5.50  
Imai 1/12 motorcycles  
Harley-Davidson Electra Glide, \$14.00  
BMW R100S, \$14.00  
BMW Krauser MKM 1000, \$14.00  
Harley-Davidson FXS Low Rider, \$14.00  
Harley-Davidson FLHC Classic 80", \$14.00  
BMW R100RS, \$14.00  
Harley-Davidson Fat Bob, \$14.00

#### Imai miscellaneous

1/16 Captain Kidd diorama, \$35.00  
1/16 HMS Victory 24-lb. Gunner diorama, \$100.00  
1/200 U. S. Coast Guard Eagle

#### Crown 1/1 pistols

M28 .357 Magnum Highway Patrol  
M29 .44 Magnum 6.5"  
M29 .44 Magnum 8.3"  
Police .357 Magnum 2.5"  
Police .357 Magnum 6"  
Walther P-38

M29 .44 Magnum 4" 7 mm cap gun  
M29 .44 Magnum 6" 7 mm cap gun

#### Miscellaneous

Five Gowland Highway Pioneer sets, \$10.00 each  
1/32 1929 Duesenberg, \$4.00  
1/32 1936 Beverly Cord, \$4.00  
1/16 1912 Ford Model T, \$16.00  
1/25 427 AC Cobra, \$14.00

#### MONOGRAM MODELS

8601 Waukegan Road, Morton Grove, IL 60053-2295  
Catalog, \$2.00

#### 1/72 aircraft

SR-71A "Call to Glory," Mar., \$8.00  
F-105F Thunderchief, Oct., \$5.50  
F-4C/D Phantom II, Oct., \$5.50  
F-4J Phantom II, Oct., \$5.50

#### 1/48 aircraft

F-4 Phantom II "Call to Glory," Mar., \$8.00  
F-105F "Call to Glory," Mar., \$8.00  
F-111A "Call to Glory," Mar., \$8.00  
F-101B Voodoo, May, \$7.75  
F-105D Thunderchief, May, \$7.75  
F-4J Phantom II MiG Ace, May, \$7.75  
B-58A Hustler, Aug., \$16.00

#### 1/32 autos

Devastator 6x6 Monster truck, Mar., \$11.50  
Intimidator 6x6 Monster truck, Mar., \$11.50

#### 1/24 autos

'65 Shelby GT-350, Feb., \$6.50  
'71 'Cuda Street Machine, Feb., \$6.50  
ZZ Top '33 Ford Eliminator, Mar., \$6.25  
Boot Hill Express Show Rod, Mar., \$6.25  
Red Baron Show Rod, Mar., \$6.25  
L'In Coffin Show Rod, Mar., \$6.25  
Skool Bandit Monte Carlo SS, Apr., \$6.25  
Valvoline Buick Regal, Apr., \$6.25  
Monster Mash Chevy 4x4, Apr., \$9.25  
Hammerhead Chevy 4x4, Apr., \$9.25  
Ford Motorsport Mustang GTP-IMSA, June, \$6.25  
7/Eleven Ford Mustang GTP-IMSA, June, \$6.25  
7/Eleven Ford Mustang AA/FC funny car, June, \$6.25  
Don Prudhomme's Firebird AA/FC funny car, June, \$6.25

Dale Pulde's Miller Warrior Firebird funny car, June, \$6.25

Snap '85 Z-28E Camaro, June, \$6.25  
Snap '85 Corvette Coupe, June, \$6.25  
Snap '85 Shelby Charger Turbo, June \$6.25  
Snap Datsun Pickup-Miller, June, \$6.25  
'65 Mustang 2+2 Fastback, Sept., \$6.25  
'64 Pontiac GTO Sport Coupe, Sept., \$6.25  
'70 Chevelle Street Machine, Sept., \$6.25  
'78 Pontiac Trans Am Street Machine, Sept., \$6.25  
'78 Chevy Camaro Street Machine, Sept., \$6.25  
'32 Ford Roadster Street Rod, Nov., \$6.25  
'39 Chevy Coupe Street Rod, Nov., \$6.25  
'40 Ford Pickup Street Rod, Nov., \$6.25  
'36 Ford Coupe Street Rod, Nov., \$6.25

#### 1/8 autos

Golden "T" Street Rod, Aug., \$35.00  
Camaro IROC-Z, Aug., \$35.00

#### Miscellaneous

Turbo Teens Trans Am Firebird  
Five Gobots

#### MPC

26750 Twenty-three Mile Road, Mount Clemens, MI 48045

#### 1/12 motorcycles

Streethawk motorcycle, June

#### 1/16 autos

'57 Corvette, June

#### 1/25 autos

'85 Firebird, Mar.  
'85 Camaro Z-28, Mar.  
'69 Firebird, Mar.  
'67 Charger, Mar.  
Streethawk Mustang, Mar.  
Monza Pro Street, Apr.  
Corvette Custom, Apr.  
Firebird Custom, Apr.  
Duster Street Machine, Apr.  
Datsun Scavenger Monster truck, May  
Corvette collector set ('57, '75, '85), May  
'75 Corvette convertible, June  
Night Stalker

Camaro Pro Street, June  
Mustang Pro Street, June  
Chevy Nova, Aug.  
Chattanooga Chew Monte Carlo, Aug.  
Copenhagen Monte Carlo, Aug.  
Valvoline Buick Regal, Aug.  
Skool Bandit Buick Regal, Aug.

#### 1/25 Autoscope dioramas

CJ7 Jeep, Feb.  
Commando Off Road, Feb.  
Barracuda, Feb.  
Mustang II, Feb.

#### Miscellaneous

Tarantula and Magnetron robots, May  
1/25 scale Jupiter locomotive, July  
1/32 snap Rhino Rig, Sept.

#### Aircraft

1/48 AH-64 Apache (Airfix), July  
1/72 AC-130H Spectre (Airfix), July

#### MRC-TAMIYA

Model Rectifier Corporation, 2500 Woodbridge Avenue,  
Edison, NJ 08817  
Catalog, \$4.00

#### 1/35 armor

M3 Bradley CFV, Apr.

#### 1/12 motorcycles

Honda CBR400F, Jan., \$11.98  
BMW K100, Jan., \$12.98  
Yamaha RZV500R, Jan., \$12.98  
Yamaha RZV500 (OW70) Grand Prix, Feb., \$12.98  
Honda CBR400F Endurance, Apr.

#### 1/24 autos

Honda Civic Hatchback, Mar., \$11.98  
Ford Sierra XR4i, Apr.

#### 1/35 ships

U. S. Navy aircraft set, Feb.  
U. S. S. Enterprise, Mar., \$139.95

#### NOVA MODELS

P. O. Box 9809, Fountain Valley, CA 92728  
Vacuum-formed aircraft kits, catalog, \$1.00

#### 1/72

Tupelov Tu-26 Backfire  
Northrop YB-49/YRB-49A Flying wing  
Douglas A-3 Skywarrior (all variants)  
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## RAREPLANES

69 Redstone Hill, Redhill, Surrey, England  
Vacuum-formed aircraft kits, catalog, 1 IRC  
1/72  
Beech King Air 200 (C-12), Feb.  
Grumman XF5F Skyrocket, May  
Douglas A-3 Skywarrior, July  
Republic AT-12 Guardsman, Sept.

## REVELL

4223 Glencoe Avenue, Venice, CA 90292  
1/32 aircraft  
Bell Jet Ranger (ex-IMC), Apr., \$6.50  
F-15C Eagle, July, \$23.00  
AH-64A Apache, Sept., \$10.50  
Tornado GR. Mk. 1, Sept., \$13.00  
1/48 aircraft  
B-25 Mitchell, Apr., \$8.50  
B-17F Flying Fortress, May, \$15.00  
F9F-8 Cougar (1/52), June, \$5.50  
1/100 aircraft  
F-14A (ex-Mania), Mar., \$4.00  
F-15A (ex-Mania), Mar., \$4.00  
F-105D (ex-Tamiya), Apr., \$3.25  
A-7A (ex-Tamiya), Apr., \$3.25  
A-6A (ex-Tamiya), Apr., \$3.25  
1/144 aircraft  
A310 Pan Am Airbus, May, \$8.50  
Space Shuttle and satellite, May, \$10.00  
Supper Guppy (ex-Otaki), May, \$10.50  
Space Shuttle Launch Complex with Shuttle, Oct., \$50.00  
without shuttle, Oct., \$40.00  
1/350 ships  
U. S. S. Iowa (refit), May, \$32.00  
U. S. S. Ticonderoga CG-47  
H. M. S. Lusitania (ex-Entex), Aug., \$60.00  
U. S. S. Missouri (WWII), Aug., \$32.00  
1/12 autos  
'55 Mercedes 300SL Gullwing, Apr., \$22.00  
Shelby GT-350 Mustang, Aug., \$60.00  
1/16 autos  
Giant Tracks, Apr., \$22.00  
Rolls-Royce Phantom III, Aug., \$60.00  
1/25 autos  
Stompers 4x4 Chevy Blazer, Jan., \$9.25  
Stompers 4x4 Chevy Pickup, Jan., \$9.25  
Stompers 4x4 Jeep, Jan., \$9.25  
Stompers Blazer with trailer and dune buggy, Jan., \$11.45  
Stompers Jeep with trailer and dirt bikes, Jan., \$11.45  
Snapkit Porsche 911 Turbo, Mar., \$8.00  
Porsche 911 Cabrio, May, \$6.75  
VW Bug, May, \$6.75  
Monza Street Machine, May, \$6.75  
Lux Mini Pickup, May, \$6.75  
Anglia Gasser, May, \$6.75  
1/32 autos  
Snapkit VW Pickup with ATC, Mar., \$6.00  
Snapkit Jeep Laredo, Mar., \$6.00  
'59 Chevy Impala (ex-Gunze Sangyo), Apr., \$6.50  
'63 Ford Thunderbird (ex-Gunze Sangyo), Apr., \$6.50  
'59 Cadillac Eldorado (ex-Gunze Sangyo), Apr., \$6.50  
Miscellaneous  
Statue of Liberty, May, \$7.00  
1/1 Western .44 pistol, June, \$6.00  
1/1 Civil War Navy pistol, June, \$6.00  
1/1 Dueling pistols, June, \$6.00  
1/1 Peacemaker .45 pistol, June, \$6.00  
1/3 Visible Turbo engine, June, \$40.00  
1/16 Wells Fargo stagecoach, Aug., \$40.00  
3 Dune kits  
17 Robotech and Autobot kits

## TESTOR

620 Buckbee Street, Rockford, IL 61108  
1/72 aircraft  
Texan Trainer (ex-Hawk), Jan., \$3.75  
F-5E Tiger II (Italeri), Jan., \$6.00  
T-28 Trojan (ex-Heller), Feb., \$5.00  
Fw 190A/F (ex-Heller), Feb., \$5.00  
P-40E Warhawk (ex-Heller), Feb., \$5.00  
F6F-5 Hellcat (ex-Heller), Feb., \$5.00  
Spitfire Mk Vb (ex-Heller), Feb., \$5.00  
P-39Q Airacobra (ex-Heller), Feb., \$5.00  
F-86E Sabre Jet (ex-Heller), Feb., \$5.00  
Mirage 2000 (ex-Heller), Feb., \$6.00

F-8E Crusader (ex-Heller), Feb., \$6.00  
Ju-87B-1 Stuka (ex-Heller), Feb., \$6.00

## 1/48 aircraft

AH-1S Cobra (ex-Fujimi), Feb., \$11.00  
F-18A Hornet (Italeri), Feb., \$7.50  
C-130 Hercules (Italeri)

## 1/35 armor

M109 A2 self-propelled howitzer (Italeri), Jan., \$11.00

## 1/24 autos

1936 Mercedes 540K (Italeri), Jan., \$8.00  
1933 Cadillac Fleetwood (Italeri), Jan., \$8.00

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Nitto 1/24 autos, June  
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with most hobby paints. Free information is available on the entire Hobbypoxy line of finishing materials.

Idea 3, Via Romolo Gessi, n.12, 10136 Torino, Italy, has added 11 fully assembled, 1/43, white metal model cars to its line: No. 601, Boucherie P. Vincent; 602, flat truck; 603, "Service Citroën" van; 604, "Les Jouets Citroën" van; 605, "Wagram" breakdown truck; 606, "Van Vliet" breakdown truck;



607, "MLS" breakdown truck; 608, "Doks Dunkerque" flat truck; 609, "Jubilé Traction" van; 610, "Coca-Cola" van; and 611, covered flat truck. Each model sells for \$40.00 plus \$5.00 for airmail postage.

Pactra Hobby Products, 16946 Sherman Way, Van Nuys, CA 91406, has introduced Packits. Each consists of a carrying case containing an assortment of paint and accessories such as a mixing bottle, detail brush, surface brush, 1/2-ounce tube of non-flammable cement, glue tip, mixing stick, flash remover, rubber band, and a handbook with tips from hobbyists. Already released are Carpac, Battlepac, and Robotpac; future releases will include Fighterpac, Seapac, Hobbypac, Propac, Craftpac, Glosspac, Flatspac, and Stencilpac. The suggested retail price is \$7.49 each.

**Coming events.** IPMS/Des Moines is sponsoring the third annual Hawkeye Open model contest April 13 at the Naval Reserve Training Center, Fort Des Moines, Iowa. Send a stamped, self-addressed envelope to Ray Lathrop, 107 2nd Street North, Humboldt, IA 50548, for further information.

The Capitol Miniature Auto Collectors Club will hold its spring meet April 14 from 9 a.m. until 2 p.m. at the Dunn Loring Volunteer Fire Department Community Hall, 2148 Gallows Road, Fairfax, Virginia. Admission for ages 12 and over is \$2.00; children under 12 will be admitted free. For more information, send a stamped, self-addressed envelope to Charles Wilding, 10207 Greenacres Drive, Silver Spring, MD 20903, or phone (301) 434-6209 after 5 p.m.

Rare-Plane Detective is sponsoring a kit collectors' convention April 14 from 10 a.m. to 4 p.m. at the Monticello Motor Lodge, Route 168, Black Horse Pike, Ballmawr, New Jersey; admission is \$2.00. More information is available from Jeffery Garrity, 125 White Horse Pike, Haddon Heights, NJ 08035, (609) 546-7079.

Noreastcon XIV — the IPMS Region 1 convention — will be held April 26 and 27 at the Sheraton Mansfield, exit 7A off I-95 North, Mansfield, Massachusetts. Send a stamped, self-addressed No. 10 envelope to Jim Guiney, 59 Summit Street, Arlington, MA 02174, for further information.

The IPMS Western Reserve Chapter will host the Region IV convention April 26 and 27 at the Holiday Inn-Independence, Cleveland, Ohio. Write to Andy Vidra, 20090 Champ Drive, Euclid, OH 44117, for details.

Recon 7, sponsored by IPMS/Bremerton, will be held May 4 at the Bayview Inn, Bremerton, Washington; registration begins at 7:30 a.m. Further information is available from George Coombs, 1310 Park Avenue, Bremerton, WA 98310, (206) 377-6082.

Bufcon will be held May 5 in Randolph Hall, Cheektowaga, New York. For information, write to Dan Marafino, 19 Church Street, Lancaster, NY 14086, or Dick Wehr, 85 Misty Lane, East Amherst, NY 14051.

Gateway Regional '85, the IPMS Region V convention and contest, will be held May 24 and 25 in St. Louis, Missouri. The convention will feature a tour of McDonnell Douglas. For information, send a stamped, self-addressed envelope to Gateway Regional '85, P. O. Box 685, Manchester, MO 63011.

The eighth annual Torcan model contest, hosted by the Peel Scale Modelers, will be held May 24 and 25 at the Constellation Hotel. More information is available from Steve Crane, 7 Oxford Drive, Weston, ON, Canada M6M 4S8, (416) 241-2741.

The Yankee Air Force will sponsor its third annual Memorial Day celebration May 27 featuring tours of the group's museum, fly-bys, military displays, warbird fly-ins, rides in a fully restored C-47 transport, performances by a precision military drill team, and exhibitions by a U. S. Army helicopter team. The Yankee Air Force Museum is located on the east side of Willow Run Airport, Ypsilanti, Michigan. For more information, call Wilbur Sanders weekdays from 8 a.m. to 4 p.m. at (313) 337-2611.

The Hoosier Model Car Association is presenting its fifth annual miniature vehicle collectors swap meet and model car contest June 2 at 431 South Shortridge Road, Indianapolis, Indiana, beginning at 9 a.m. For additional information, contact Dave Williams, 5925 North Rosslyn, Indianapolis, IN 46220, (317) 257-2832.

The Central Arkansas Modelers Society will host the "Rufus" invitational mini-contest and swap meet June 8 at the Ramada Inn, Highway 67 North, Jacksonville, Arkansas; the hours are 8 a.m. until 7 p.m. Registration is \$5.00 in advance or \$7.50 at the door. More information is available from Steve Wilson, 600 Erving Ridge, Cabot, AR 72023, (501) 982-8785.

The Indianapolis Adam's Mark Hotel will be the site of the 1985 IPMS national convention, July 18-21. For more information write to IPMS Indianapolis, 1985 National Convention, P. O. Box 88295, Indianapolis, IN 46208.

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May/June 1985 9



Every FSM Workbench Review is a first-hand report by a modeler who has actually built the kit or used the product. While our reviewers are encouraged to compare the products to similar ones in their experience, evaluation is of secondary importance; the reviewer's primary goal is to provide a detailed description of the product so FSM readers can evaluate it for themselves. Models shown in Workbench Reviews are built straight from the box.

**Kit:** No. 2608, 1985 Corvette

**Scale:** 1/8

**Manufacturer:** Monogram Models Inc., Morton Grove, IL 60053-2295

**Price:** \$35.00.

THE LATEST "SUPER SCALE" auto kit from Monogram is the newest U.S.-made supercar — Chevrolet's Corvette. The 131 parts are molded in red, black, metallic gray, chrome, and clear styrene. The four vinyl tires are one of the high points of the kit; they accurately portray the left- and right-handed Goodyear Eagle VR50 "gatorback" tires found only on the new Corvettes. Decals include some of the dashboard instruments, underhood maintenance placards, and license plates.

Although the dashboard and seats were well molded, the shallow relief of the interior door panel latches and window switches was a disappointment. The engine has excellent detail, but the underframe is not as detailed as on some 1/25 scale Corvette kits. The windows are thin and clear, with well-marked lines for the black-painted areas. I



Both photos, Brian Gibbs

wish the taillight lenses were molded in transparent red styrene instead of clear.

The 53-step instruction sheet is easy to follow except for the exact location of the alternator bracket (No. 38 in step 38) and the air conditioner hose (No. 71 in step 43). The parts fit well, but I had a little trouble with the windshield and rear window — the roof pillars were slightly warped, probably damaged in shipping. I had to resort to super glue to attach the windows.

The chassis is attached to the body with a tab flange at the rear and four screws at the front. Adjusting these screws allows the hinged hood to sit properly when closed. Although I don't have measurements to compare the model against, it certainly looks accurate compared to photos in Michael Lamm's *The Newest Corvette*. For sheer size, the model is impressive — nearly 22" long. Although a large model, it wasn't difficult to



build. Modelers with little experience should be able to handle it easily — I spent 15 hours on mine. It makes a nice companion piece to Monogram's 1/8 scale 1965 and 1978-1982 'Vettes.

Art Loder

**Kit:** No. 2447, Porsche 956

**Scale:** 1/24

**Manufacturer:** MRC-Tamiya, Model Rectifier Corporation, Edison, NJ 08817

**Price:** \$12.98.

CAN A RACING CAR be invincible? The Porsche 956 certainly comes close. Porsche introduced the 956 in 1982 to meet the new Group C Prototype regulations for the World Endurance Championship, which it has won for the three years since. In the 1982 24-hour Le Mans, it swept the first three places, then in 1983 it took nine of the first ten, and in 1984 it swept the first seven. Nearly invincible!

The kit contains 89 parts molded in white, gray, and clear styrene with vinyl tires and soft plastic wheel bearings. The six-color decal sheet provides markings for any of the three factory "Rothmans" entries from the 1983 Le Mans race. A removable rear body section reveals the highly detailed engine, transmission, and suspension bay. The quality of the molding is excellent, typical of MRC-Tamiya's recent releases.

I built the model according to the easy-to-follow, illustrated, 14-step instructions. I found one problem regarding the paint references: The recommended Tamiya Acrylic Blue (X-4) is too light for the dark blue body color. The darker Tamiya X-3 correctly



Bruce Johnson

matches the Rothmans blue. All other color references are accurate.

The kit is cleverly engineered — some mold seams match welded seams on the real car, most noticeable on the air boxes in the intakes. Although the completed model looks complex, construction is simple enough for an average modeler.

The box art is the best reference for the engine compartment details that I have seen. Modelers who wish to add extra details to this area need look no further.

The decals were neatly printed and went

on easily. After I applied a small amount of setting solution, they conformed to the complex contours of the model with no wrinkling. However, the dark blue paint showed through the white decals. The individual instrument decals for the cockpit instrument panel are a nice touch.

The completed Porsche appears accurate compared to photos in *Grand-Prix International Le Mans 1983 Special*. The careful assembly and detail painting takes extra time but the results are worth it. I took 26 hours to complete the model.

Bruce Johnson

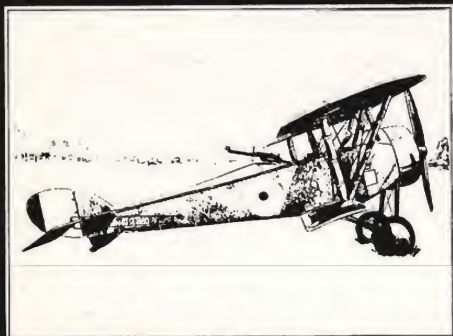


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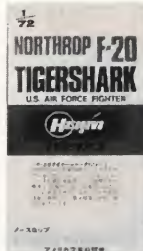
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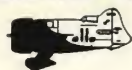
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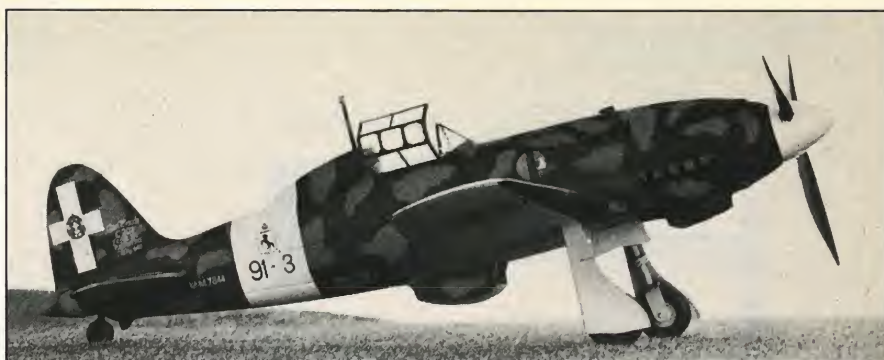
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All photos, FINESCALE MODELER: A. L. Schmidt or Paul A. Erler, unless otherwise credited.

**Kit:** Macchi C.202 Folgore

**Scale:** 1/48

**Manufacturer:** Gull Models, distributed by War Eagle Inc., P. O. Box 255, New Baltimore, MI 48047

**Price:** \$17.95.

ALTHOUGH IT WAS the most famous Italian World War Two fighter, only one kit of the Macchi C.202 came close to 1/48 scale — the unavailable 1/50 scale Artiplast kit. This new Japanese vacuum-formed kit fills that gap in 1/48 scale WWII collections.

The kit contains 26 parts, including white metal parts for the prop, main wheels, and tail wheel. Rolled aluminum sheet is provided for the main gear struts. An excellent decal sheet with markings for six aircraft is furnished. The instruction sheet is also excellent and includes an exploded-view assembly diagram, 1/48 scale three-view drawing, side-view drawings of all six aircraft featured on the decal, color notes, and a reference list.

The wing is molded in upper and lower halves — this simplifies construction and

ensures proper dihedral. I found the metal prop well molded, but the rolled-aluminum landing gear struts were difficult to work with and oversize — I substituted aluminum tubing instead. Although the metal wheels lacked detail they were usable, but the instrument panel and seat were so crude that I made substitutions from my spares box. The panel lines were recessed, but too pronounced, and there were numerous flaws in the surface of the plastic — light filling and sanding took care of them. The vacuum-formed clear canopy was poor.

Despite these problems, the kit fit together well — it would be an excellent choice for a first vacuum-formed project. The sharp decals are the icing on the cake. The finished model scales well against the dimensions given in Squadron/Signal's *Macchi C.202 in Action*, but some shapes differ slightly from the drawings on the instructions. I was surprised at how little time I took to finish the model — 12 hours. Although simple to build, I recommend it to experienced modelers.

Randy Fields



**Kit:** No. 0360, Super Etendard

**Scale:** 1/72

**Manufacturer:** Heller, distributed by Polk's Model Craft Hobbies Inc., 346 Bergen Ave., Jersey City, NJ 07304

**Price:** \$6.50.

ALTHOUGH A GRACEFUL aircraft, the French Super Etendard would have experienced relative obscurity if it were not for the Falklands conflict. The Argentines used theirs to launch the French-made Exocet anti-ship missiles which sank at least two British ships.

Heller's kit contains 37 parts molded in gray and clear styrene which seemed a little

softer than usual. The kit is broken down with simplicity in mind. The fuselage is split horizontally, sandwiching the one-piece wing between the halves. After assembling and sanding seams, this split prevents loss of the more obvious details on the top of the fuselage. The one-piece horizontal stabilizer slides into a notch in the vertical tail. The recessed surface detailing is above average and an improvement for Heller; the cockpit interior is adequate but can be improved easily with spare parts and decals. Complete markings for a l'Aéronavale Française machine are provided on the decal sheet.

The parts fit well with the exception of the nose gear strut — it angles back but



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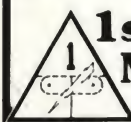


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New Rochelle, NY 10802

should be 90 degrees to the ground. The instructions were easy to follow, but Heller's reference to only Heller paints (unavailable in the U. S.) is a problem. The red flap no-walk area decal wouldn't settle into the detail on top of the wing.

The finished model captures the distinctive shape of the Super Etendard and scales perfectly with the dimensions given in the instructions. It was simple to build and only took 10 hours; beginners should have little trouble.  
*Dennis Moore*



Brian Gibbs

Kit: No. 1-4409, MIL Mi 24 Hind A and D  
Scale: 1/72

Manufacturer: MPC, CPG Products Corp.,  
Mt. Clemens, MI 48045

Price: \$5.50.

THE AGGRESSIVE-LOOKING Russian Hind gunship helicopter is becoming a familiar sight to many aircraft enthusiasts. It is now being used by many Warsaw Pact countries, has seen service in Afghanistan, and recently has been shipped to Nicaragua. Puma helicopters, masquerading as Hinds, had a starring roll in the movie *Red Dawn*.

The MPC (Airfix) kit is the first of this helicopter. The Airfix-boxed kit from England includes parts for only the D version, but the American MPC kit has a bonus in alternate parts for the earlier (and esthetically more pleasing) A version. I built one of each. The MPC kit contains 135 parts with alternate nose transparencies, tail rotor masts, cockpit interior, and ordnance for each version. The detail is of average quality, but the missiles and launch rails are too thick.

The instructions and decals are the weak points of the kit. Some of the alternate parts aren't mentioned in the instructions; part No. 76 is a forward-looking infrared pod (FLIR) to be mounted on the inboard left py-

lon of the A version. There are two sets of rocket pod bottoms (one set for each version) numbered the same (Nos. 78, 82, 92, and 96) — the parts on the sprue with the A version parts should be used only on the A version helicopter. Some early D versions had the tail rotor on the right side as does the A version. I haven't found photos of an A version Hind with the domes on the jet intakes (part Nos. 41 and 42).

There are markings for a Czech D version only on the decals and the Czech national insignia is incorrect; it lacks the white portion. I substituted the Czech markings from an Airfix-boxed kit and used Scale-Master Russian stars on the A version.

The only fit problem I had was joining the tail rotor mast to the fuselage — this requires some filling and sanding. The finished models look right, but there may be no accurate dimensions to refer to; the Russians don't provide much information on their aircraft, but a good source is Bill Gunston's *Aircraft of the Soviet Union*.

I spent 10 hours on each model, about average for a helicopter kit in this scale. Modelers with a little experience shouldn't have any trouble building it, but beginners may be confused by the instructions and inaccurate decals.  
*Art Loder*

Kit: No. RS 201, Anatra Anasal DS  
Scale: 1/72

Manufacturer: Red Star, available from  
Squadron Mail Order, 1115 Crowley Drive,  
Carrollton, TX 75011-5010

Price: \$5.98.

WORLD WAR ONE aircraft are rarely the subjects of new kits these days, but Red Star has brought smiles to the faces of "kite" fans. The Anatra Anasal DS was a two-seat observation scout used by the Russians in the Great War.

The kit contains 47 pieces molded in gray and clear styrene. Interestingly, the spoked

wheels are molded in clear — painting the raised spokes silver gives the impression of see-through wire-spoked wheels. Considering the scale, the engine and cockpit interior is superb. Decals for two aircraft are included.

The instructions are printed in English only and include exploded-view diagrams. Due to the complicated radiator and strut assembly, I recommend that you read the instructions carefully. They are easy to understand, but the radiator hoses (part Nos. 31 and 32 in step 11) aren't numbered correctly in the text; the diagram is right. I had some nervous moments attaching the upper



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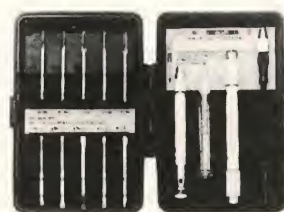
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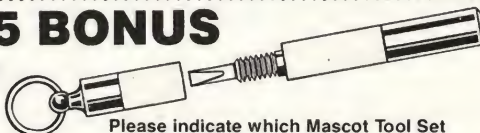
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wing to 11 wobbly struts, but once the glue dried the assembly was rock steady. I found it easier to attach the radiator and pipes after installing the upper wing.

The decals were poorly printed so I substituted Russian cockades from Americal/Gryphon sheet No. 11. The finished model scaled close to the dimensions in Kenneth Munson's *Bombers Patrol and Reconnaissance Aircraft, 1914-1919*, but there was no gun for the rear-seat observer. The finished model looks good and is a welcome addition to my WWI collection. This project took 16 hours to finish. Like any biplane, the spindly struts and rigging will be trouble for beginners, but experienced modelers will enjoy the change from Phantoms and F-16s.

Stephen R. Gilbert



Kit: Convair 340

Scale: 1/144

Manufacturer: Airliners America, available from ATP, 3014 Abelia Court, San Jose, CA 95121

Price: \$15.00.

ALTHOUGH THE CONVAIR 340 never earned the nostalgic affection bestowed on the DC-3, it was one of the best all-around piston-engined airliners built. Many 340s and 440s were converted to prop-jet 580s and 660s and are still in service with major airlines. This is actually an Atlantic Models kit made by Helio Belasario and packaged with decals by ATP.

The fuselage, wing, and horizontal stabilizer are solid expanded polyurethane foam with surprisingly good exterior detail. The propellers, landing gear, and gear doors are molded in clear styrene. The instructions describe the special handling and modifications that need to be made, but do not have assembly diagrams. A color photo of a built-up model is pasted to the cover of the box. The North Central Airlines "Super Northliner" decals are excellent, although the bird logo seems misshapen.

Although the molded-in detail is good, the

fuselage on my model suffers from a bad mold register; the mold halves didn't line up, producing a step on the top and bottom. The large sprue stubs must be carefully carved away from the foam pieces. Cutting into the foam is easy, but it reveals numerous bubbles that must be filled with putty or gap-filling super glue. Some foam material must be removed from the fuselage behind the wing or weight implanted ahead of the wing to get the model to sit on its gear. I used super glue to assemble the model, and I had to use filler at the wing/fuselage and horizontal stabilizer/fuselage joints.

The plastic gear can be used after being cleaned up, but I found the propellers poorly molded — I substituted props from an Entex 1/100 scale DC-3. The trailing edge of the wing is too thick, but correcting this problem is tricky; the foam crumbles if it is filed too thin.

The completed model compares well with the dimensions in Arco's *An Illustrated Guide to the World's Airliners*. Despite the small number of parts, it is not an easy kit to build. I took 10 hours finishing it and I'm happy with the model. It's got a special spot on my shelf full of airliners. Dave Hogston

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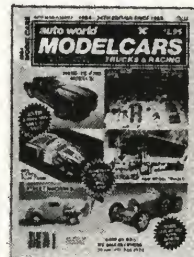
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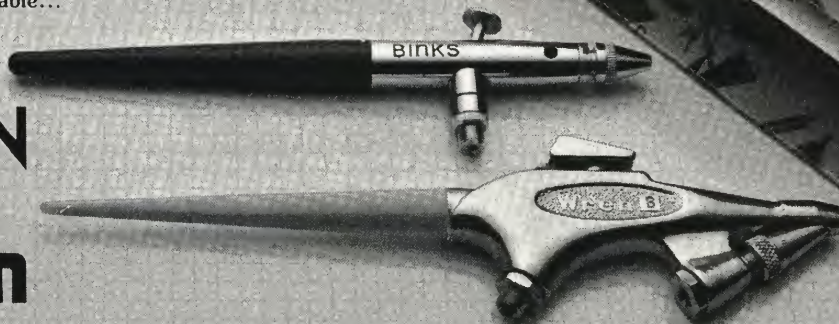
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FSM readers should check their local hobby shops for the items in this column before writing directly to the manufacturers.

FINESCALE MODELER staff photos by  
A. L. Schmidt and Paul A. Erlar



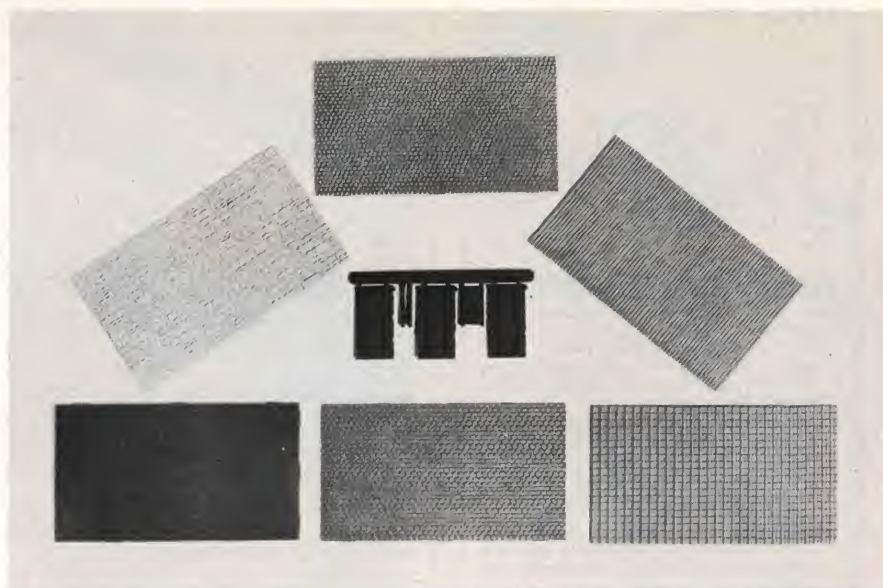
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More than 72 colors of water-soluble acrylic paint are available from The Armory, 4145 Amos Avenue, Baltimore, MD 21234. The suggested retail price of each 1-ounce jar is \$1.39. Also available are 16 silk and satin colors, sold in sets of 8.



## Building construction materials

Wills Finecast, Lower Road, Forest Row, Sussex RH18 5HE, England, sells a wide variety of styrene building construction materials for scale modelers. The line includes

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## Tweezers

The Blue Line Company, P. O. Box 737, Bettendorf, IA 52722, has introduced Miracle Point tweezers. The Miracle Point, made of polished surgical steel, is guaranteed to maintain optimum strength and sharpness, according to the manufacturer. It comes with a plastic carrying case and retails for \$2.49.



## Aircraft parts

White metal aircraft accessories in 1/72 and 1/48 scales are available from Aeroclub Models, 5 Silverwood Avenue, Ravenshead, Nottingham NG15 9BU, England. Pictured (all 1/72 scale) are No. AG 009, Luftwaffe MG 15 guns; EJ 014, Martin Baker GRU7 ejection seats; P 022, Hamilton Standard Hydromatic propellers; and EP 024, Pratt & Whitney Gear Wasp 1340 engine. Send three International Reply Coupons for a catalog.



## Straightedge and sharpener

Micro-Mark, 24 East Main Street, P. O. Box 5112, Clinton, NJ 08809, sells a blade sharpener (above) and a stainless steel mini straightedge (below). The blade sharpener, product No. 14293, will sharpen No. 11 or No. 16 modeling knife blades. A cradle is designed to hold the blade at the correct angle for sharpening. Manufactured by The Edger of Ventura, California, it sells for \$12.95 plus \$2.50 postage. The knob-held straightedge, product No. 14162, is 6" long, 2" wide, and 3/64" thick. It sells for \$9.95 plus \$2.50 postage. Double postage costs for shipment outside the U. S.





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#### Photoetched aircraft accessories

P. P. Models, Cherry Tree Cottage, Grove View, Bristol Road, Hambrook, Bristol BS16 1RE, England, manufactures 1/72 scale photoetched metal aircraft accessories. Items available include crew access ladders, ejector seat handles and canopy mirrors, and crowd barriers. P. P. Models asks that overseas customers request a pro forma invoice before ordering.



#### Pliers and shears

Three modeling tools available from PBL, Box 749, Chama, NM 87520, include (left) Super-Shears flush-cutting pliers, \$10.95; (center) macro-nose pliers, \$6.95; and (right) Pro-Shear flush cutters, \$5.95. PBL recommends the shears for brass, copper, and other relatively soft metals, and states that the flush cutters have an intentional overbite so the jaws sharpen themselves instead of hitting each other directly.

#### Palm trees

H & R Trains, Inc., 6996 U. S. 19 North, Pinellas Park, FL 33565, sells ready-to-plant palm trees, product No. 001-500 (right). These multi-scale plastic trees are approximately 3 1/4" high, have brown trunks and green fronds, and can be further shaped and weathered. Each package includes four trees and sells for \$3.40; UPS shipping charges are extra.



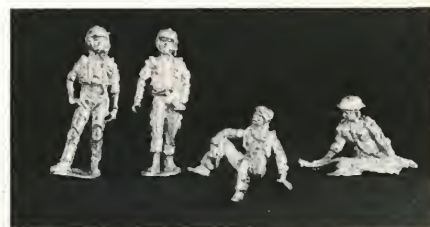
#### Casting metal

Bear Locomotive Co., 1361 Tuckerton Avenue, P. O. Box 265, Whiting, NJ 08759, offers a heavy alloy of lead and other metals with a melting point of approximately 158° Fahrenheit. Bearmetal-158 is packaged in 1/4 pound (left), \$4.50; 1/2 pound, \$8.00; and 1 pound (right), \$15.00. It also is available in bulk. All prices include postage.



#### Brass backsaw

Mascot Precision Tools, 750 Washington Avenue, P. O. Box 243, Carlstadt, NJ 07072, has introduced a brass backsaw with replaceable blades, product No. H106, \$9.35. It includes a 10"-long backsaw with 3/4", 1", and 1 1/4" blades. The 3/4" and 1 1/4" blades have 34 teeth per inch, while the 1" blade has 42 teeth per inch.



#### 1/48 scale figures

Four 1/48 scale white metal figures are available from Charles A. Muñana of Taxdir Miniatures, Casado del Alisal, 10, Madrid 28014, Spain. From left are No. A/1, USAF jet pilot, Vietnam, 1967; A/2, U. S. helicopter pilot, 1967; A/3, U. S. Navy carrier pilot, 1943; and A/4, R. A. F. armorer, 1943. Each sells for \$3.50, which includes surface shipment to the U. S. The figures do not come with painting instructions. Other planned releases are a German soldier with bicycle, 1944; Luftwaffe fighter pilot, 1944; and Luftwaffe mechanic, 1944.



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#### Diorama accessories

Sheets of photoetched brass parts and accessories made by Scale Link of England are available from Warwinds International, P. O. Box 686, St. Louis, MO 63188. Shown are No. F41, plants and foliage (4 mm, 1/4 scale), and No. 32F1, 27 strands of barbed wire (7 mm to 9 mm, 1/35 to 1/25 scale). Each is \$6.00. The Scale Link catalog, \$2.00, also lists white metal castings and figures.



#### Scale trees

GSFC, 1640 North Johnson Avenue, El Cajon, CA 92020-1295, sells scale model deciduous trees from 2" to 24" tall. Packages available include "A," six trees no more than 5" tall, \$4.99; "B," two or three trees between 5" and 9" tall, \$3.99; "C," four trees between 9" and 12" tall, \$10.95; and "D," three trees between 12" and 15" tall, \$14.95. Add 10 percent for shipping, with a minimum charge of \$1.00 and a maximum of \$4.00. Write for a quote on special orders.

#### Decal setting solutions

D. G. Modelling Products, 8080 Langdon Avenue, Van Nuys, CA 91406, has released two types of decal setting solution (right). SuperSett contains adhesive, while SuperSett Too does not. The manufacturer recommends that SuperSett be used only under decals since it leaves a flat finish after it dries. SuperSett and SuperSett Too are available only in retail stores; the suggested price for each 1-ounce bottle is \$1.29.



#### 54 mm French Marine

This 54 mm 1914 French Marine, product No. ME4, is included in the range of metal figures available from Bombardier Models, 23 Whitehill, Bradford on Avon, Wiltshire BA15 1SQ, England. It sells for £3.00 (approximately \$3.30); add 10 percent for postage in the United Kingdom, 30 percent overseas.



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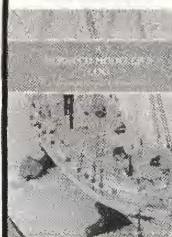
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**See page 70 for details.**



### 54 mm figures

King Arthur (No. C-114) and Queen Guinevere (No. C-115) are recent releases from Imrie/Risley Miniatures, Inc., P. O. Box 89, Burnt Hills, NY 12027. These 54 mm metal figures retail for \$5.95 each.



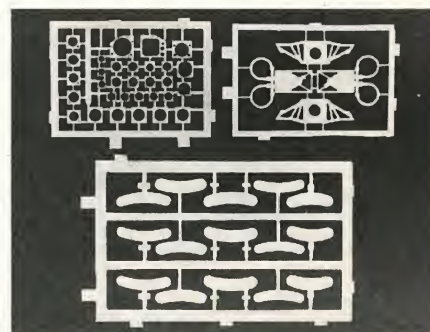
### Monogram Snap Tite kits

Recent releases from Monogram Models, Inc., 8601 Waukegan Road, Morton Grove, IL 60053-2295, include two Snap Tite display kits. Stock No. 1109, a 1/110 scale SR-71A "Blackbird," comes with a display base, decals, and a Strategic Air Command logo. The 1/200 scale Space Shuttle, No. 1110, features a display base, miniature astronauts, hinged cargo bay doors, and optional payload modules. Each kit retails for \$5.00.



### Paint, brushes, and brush soap

M. Grumbacher, Inc., 460 West 34th Street, New York, NY 10001, is offering Keepsake acrylic craft colors. Each 2-ounce squeeze bottle retails for \$1.50. Grumbacher's brush soap cleans and conditions any type of brush; a 3.69-ounce jar sells for \$4.95. Also shown is No. 7806-1, control-plus round detail paintbrush, \$2.50.



### Aircraft detail parts

New aircraft detail accessories from Model Technologies, 15561 Product Lane, Unit D16, Huntington Beach, CA 92649, include (top left) No. MT 0016, 1/32 scale F-15, F-16, and miscellaneous instrument bezels, \$4.00; (top right) MT 0014, 1/48 scale Martin Baker ejection handles with F-15 HUD, \$2.75; and (bottom) MT 0010, 1/32 scale jet aircraft mirrors, \$5.00.

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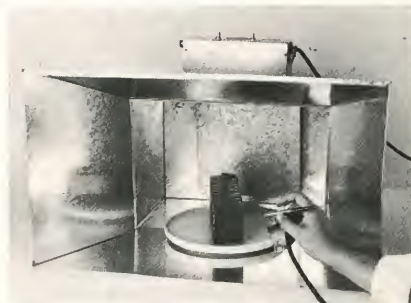
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## FROM THE EDITOR

# Somebody ought to make. . . .

I'VE JUST FINISHED READING over 650 questionnaires from the first full-scale FSM reader survey. They were bound into a random sampling of the January/February 1985 issue, and were filled out and returned by FSM readers who purchase their copy on the newsstand or in a hobby shop, as well as by subscribers. My thanks to all of you.

We haven't had time to sort and compile and analyze the results yet, but I've learned a good deal about what you FSM readers want. Needless to say you don't all want the same things, and I've come away convinced no two FSM readers have identical modeling interests.

In my note on the first page of the questionnaire I said that the survey might be helpful in encouraging production of new hobby products, and near the end we provided room to write in what products you'd like to see offered. In hopes that manufacturers may read it, here's a list of the three most-asked-for items:

- A hobby-size vacuum-former. So many of you wrote this in, then added that you planned to buy one (in the question about tools), that it just has to be the most-wanted item. My guess is that the ideal machine would connect to a shop vacuum, contain its own heating element, and be able to form bigger parts than the old Mattel Vac-U-Form. A lot of us would settle for an all-new version similar to the Mattel design.
- Detail parts. Aircraft modelers want cockpit details in all scales, armor modelers want similar items, and ditto for automobile detailers. The gist of this is that non-railroad modelers want extensive lines of separately packaged parts similar to those in the railroad department.
- A U. S. M24 Chaffee light tank in 1/35 scale. True, that wasn't the only kit asked for, but it's the one that seemed to pop up most often as I unscientifically thumbed through the surveys.

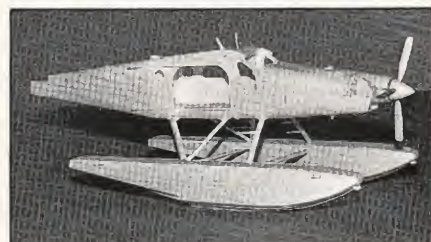
I plan to pass more of your suggestions — especially those for new kits — to the manufacturers once we've tabulated the survey results. In the meantime, turn to our special staff report on new kit releases (page 6) to see what's in store for 1985.

*Bob Haydel*  
Editor

FineScale  
**MODELER**

# NEXT ISSUE

## FEATURES



Scratchbuilding a Pilatus PC-6. Ron Lowry.

The July/August issue of FSM brings a potpourri of modeling projects your way! Canadian modeler Ron Lowry starts from scratch to model the Swiss-built Pilatus PC-6 Turbo-Porter in 1/25 scale, and even if you don't have a yen to model this modern STOL "Jeep of the air," there's a lot to learn from Ron's techniques. And, Jamie Pye tells you how he modeled the one-of-a-kind F-15 "Streak Eagle" — in both 1/48 and 1/72 scales. An important aspect of the description is how he achieved a startlingly realistic multi-hued bare-metal finish.



PaK 40 RSO. Terry Sunday.

Armor modeler Terry Sunday returns to the pages of FSM with a 1/35 scale conversion that's an ideal introduction to scratchbuilding! The subject is a German 7.5 cm PaK 40 antitank gun mounted on an RSO tractor chassis, and Terry provides full-size templates for the cab parts (the rest comes from kits). Plus you'll find articles on converting a '53 Chevy and an F11F-1 Tiger, on painting and detailing a Series 77 paratrooper, and a short piece on making old tin cans for dioramas!

**ALL IN  
JULY/  
AUGUST  
FSM!**



# Paul Budzik's 1/12 scale McLaren M23

*A magnificent — and complex — conversion*

A CLASSIC FORMULA 1 racing car, the McLaren M23 made its appearance in 1973 and stayed competitive until early 1977, a long time for a Formula 1 car to remain in front line service. Emerson Fittipaldi in 1974 and James Hunt in 1976 drove the car to world championships.

Paul Budzik of Fresno, California, built the late version of the car driven by James Hunt from a 1/12 scale Tamiya kit. Paul told FSM that he prefers 1/12 scale for single-seat racing cars because it is a good size for display, but also allows him to reproduce all the significant details.

The most noticeable differences between the kit and the version Paul modeled appear in the bodywork, the later versions having shortened noses mounting larger wings. The shroud surrounding the driver was lengthened to accommodate a front roll bar. The air box has a lower profile as dictated by a regulation change. Side pods housing the oil coolers were added, as were a modified rear wing and mounting system.

tyrate so that the depression for the mounting of the windscreen needed to be reduced in depth," according to Paul. "I did this by laying a piece of .015" styrene in the depression. This was trimmed to match the existing height of the fairing. In place of the normal mounting pins I substituted 00-90 screws so that the fairing could be drawn down snugly against the monocoque. The windscreen was mounted after painting by using .020"-diameter straight pins with their heads cut down and painted black."

Paul explained that the air box was the most difficult conversion: "I started by cementing the original air box together. I cut it down so that it had the correct side profile. A piece of sheet styrene with the correct upper outline was cemented to the top. I then cemented a piece of styrene with the correct profile to the front. The rest of the additions were done with pieces of sheet styrene."

"The outside contours of the air box were shaped to a final stage before the openings in the air box were cut. I tried to keep the use of fillers to a minimum as this part would un-



Photos by Paul Budzik

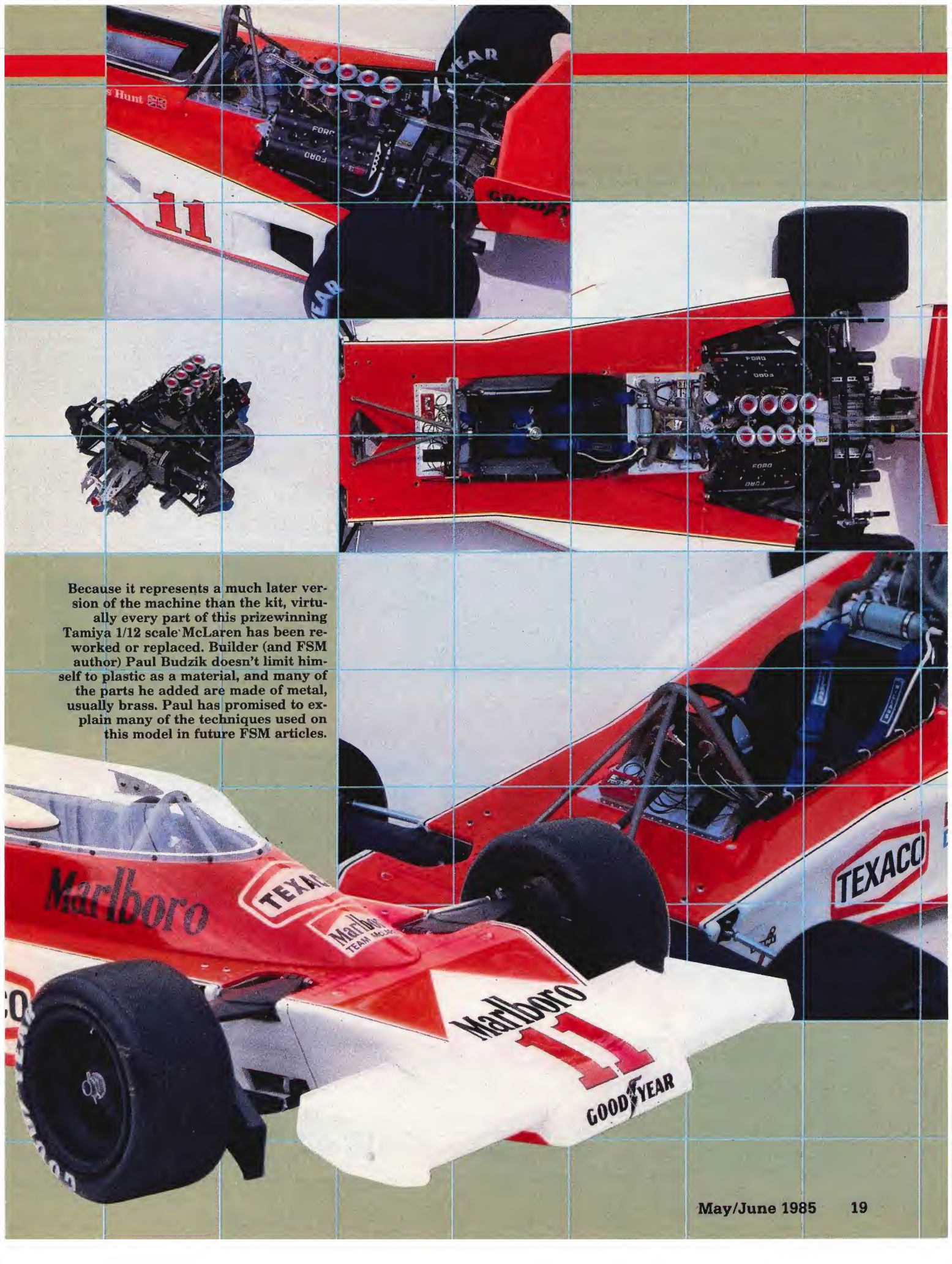
The fairing that surrounds the driver had to be lengthened to extend past the joint between the monocoque and the nose piece. Paul spliced two fairings together, but says he could have spliced in a section of sheet styrene instead. Because these joints can be fragile, he backed up the joint with a piece of .010" sheet styrene.

"A new windscreen was to be formed from .007" sheet bu-

dergo some flexing when taken off and on and I did not want anything to crack."

Modifications to the main part of the body included new cutouts for the front suspension and adding side pods which held the oil coolers. Paul told FSM that his assembly se-

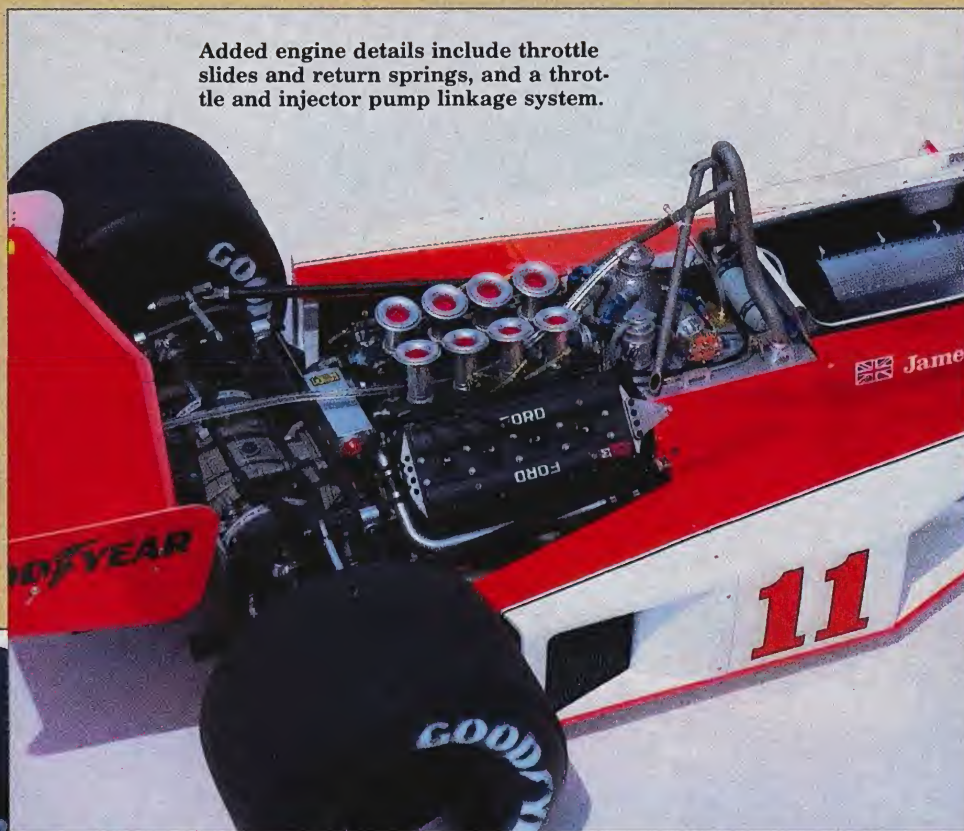




Because it represents a much later version of the machine than the kit, virtually every part of this prizewinning Tamiya 1/12 scale McLaren has been reworked or replaced. Builder (and FSM author) Paul Budzik doesn't limit himself to plastic as a material, and many of the parts he added are made of metal, usually brass. Paul has promised to explain many of the techniques used on this model in future FSM articles.



Added engine details include throttle slides and return springs, and a throttle and injector pump linkage system.



The model is painted with acrylic enamel automotive finish. Paul described his painting techniques in his article on superdetailing 1/12 scale motorcycles in the May/June 1984 FSM.



quence for this part of the model differed greatly from the instructions. "I had already determined that if the seam between the upper and lower body halves was to be effectively hidden the car halves would have to be assembled before painting," he said. "If the instructions were followed, all the internal structures would have to be fitted in prior to cementing the two halves together, which would make for a nightmare of masking. I found it easier to assemble the two halves, then fit the other parts in later. This can be done by simply removing a few locating pins."

Paul painted the entire car white with acrylic enamel made by Ditzler for use on automobiles. After this was set he masked off and painted the Dayglo red areas of the car. He used Martin Senour fluorescent red that he emptied out of a spray can, then airbrushed.

After Paul applied all the decals and transfers he gave the entire car several coats of clear gloss, sanding with 600 wet sandpaper between coats.

The front roll bar and instrument panel were fabricated from brass rod, sheet, and machinings. The rear roll bar was formed in a similar way except that it did not require the mounting of an instrument panel.

Paul reworked the entire front suspension and most of the rear suspension, adding many scratchbuilt metal parts. All assembly and soldering was done on a jig he made to simulate the correct position of the components; the jigs were made on a block of aluminum. The mounting points



Formula 1 race car cockpits are a lot less cluttered than those of aircraft, but this one looks as if you could strap yourself in and drive it away.

were anchored by brass machinings screwed into the block.

"I got tired of making so many suspension rod ends," Paul told FSM, "so I made a variety of different sizes and a rubber mold so they could be mass-produced by lost wax castings. This way I select the proper size end and drill a hole in the end of a rod of the correct diameter to accept the end fitting. The two are soldered together and I have a rod."

"The engine is as fully detailed as I could make it. Lost wax castings were used for the injectors, hose fittings, wire connectors, and plug covers. A new injector pump and distributor assembly were made by repositioning the ignition box to the front of the transaxle housing."

Paul states that a seasoned observer of Ford-Cosworth engines will note a few differences in the way the engine components are set up. The ignition box was repositioned and the last injector of each bank has been turned 180 degrees to have its fuel pickup on the inside. This was done to facilitate the aerodynamics of the rear portion of the air box.

Attachment of the throttle cable is internal to the banks of injectors as on early DFVs rather than to an outside mounted lever as was usually seen.

Paul scratchbuilt the rear wing mount from brass similar to the way he made the wing endplates, taped together during the machining processes so they were identical. The wing support was anchored in place with four press-fit bolt head pins.

**FSM**

The model won the Judges' Best Automobile award at the 1984 IPMS/U. S. A. national convention.







The finished Czechmaster kit exhibits the unusual design of the Leduc 022. Note position of the cockpit and long, cylindrical fuselage.

# Building your first epoxy-resin aircraft kit

Modeling the Leduc 022 in 1/72 scale

BY H. SCOTT EDWARDS

**M**ODERN MODEL KITS are produced in a variety of materials — injection-molded or vacuum-molded styrene, metal, wood, and the new-comer — epoxy resin.

One of the pioneers of epoxy resin kits is a Czechoslovakian firm, Czechmaster. This is a group of modelers who have formed their own cottage industry

producing resin castings of unusual aviation subjects. Some of these resin kits have been used as masters to make the molds for vacuum-formed kits of these rare subjects.

Unfortunately, Czechmaster resin kits are produced in small quantities — only 30 or 40 kits are cast from each mold. The best way to get them is to correspond with modelers in Czechoslovakia, many of whom are willing to

trade for kits from the U. S. (Some Czech modelers advertise in the classified section of FSM and IPMS/U. S. A. Update.) Also check kit collector clubs such as Kit Collector's Clearinghouse\* (KCC) and Kit Collectors International.\*\*

This article tells how I built the Czechmaster resin kit of the Leduc 122. The only other model of this aircraft was produced by Maquettes Ariennes Francaises (MAF) in 1/96 scale, and is now long out of production.

**Experimental ramjet.** The French Leduc 022 was designed by René Leduc as a supersonic, ramjet-powered interceptor. It was developed from his earlier straight-winged Leduc 010 and 021 experimental ramjets. Unlike the earlier designs, which were air launched from a mother plane, the 022 was able to take off under its own power with the aid of a SNECMA Atar D.3 turbojet engine installed within the body of the ramjet.

The Leduc 022 made its maiden flight on December 26, 1956. By March 1957, it had completed more than 30 test flights on the power of the Atar alone. However, cuts in the French military budget in 1957 brought further flights and development to a halt. I haven't found any evidence indicating that the Leduc 022's ramjet was actually tested in flight.

**What you get in a resin kit.** I got my kit from a stateside collector who generously provided me with photocopies of Tom Bauer's 1/72 scale 3-view drawings. These and the information I found in the 1957-58 edition of *Jane's All the World's Aircraft* were the only references I had on the aircraft — the kit



Fig. 1. The parts are molded in a translucent green epoxy resin. Note all small parts are molded in a sheet of flash. Scott used a hot knife to cut the small parts out.

\*Kit Collector's Clearinghouse, 3213 Hardy Drive, Edmond, OK 73034.

\*\*Kit Collectors International, P. O. Box 38, Stanton, CA 90680.





**Fig. 2.** Resin kits sometimes have holes caused by gas bubbles formed when the epoxy cures. Scott filled the larger holes with Elmer's Professional Carpenter's Wood Filler, and the smaller ones with Squadron Green Putty.

didn't have instructions or decals.

Most of this 27-part kit is molded in translucent, dark green epoxy resin, Fig. 1, which is noticeably harder and more brittle than styrene used in most injection-molded models. The cylindrical cockpit canopy is vacuum-formed from transparent acrylic plastic.

Considering the molding method, the parts are superbly detailed with fine engraved panel lines. Other details include an instrument panel, interior of the main wheel wells, and a combustion chamber in the exhaust nozzle. The tail, wings, nose cone, and fuselage are individual solid pieces. The landing gear struts, pitot tube, undercarriage bay doors, and so forth are molded together in a thin piece of molding flash.

**Preparing the parts.** My first step in preparing the parts for assembly was to remove all the molding flash. I used jeweler's files on big parts like the wings and fuselage. I used a hot knife made from a No. 11 X-acto blade in a soldering iron to cut the small parts out of the flash sheet. I first tried scoring around them and snapping them out of the flash sheet vacuum-formed style, but the parts wouldn't break away on the scored lines.

I kept all the flash to test the compatibility of various glues and paints. Ordinary styrene cements won't work on epoxy resin, so I used cyano-

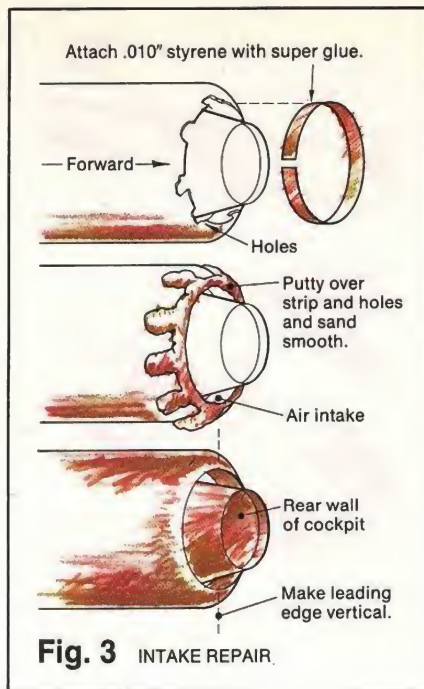
acrylate cement (super glue) to build this kit; all of the enamel paints I tried worked fine.

One of the drawbacks to resin kits is the many tiny bubbles on and just below the surface of the parts. These occur as the resin cures and must be filled for a good finish. To make them easier to fill, I enlarged the holes with an X-acto knife, much like a dentist drills out a cavity in a tooth. I filled the big holes with Elmer's Professional Carpenter's Wood Filler,\* Fig. 2, and the smaller ones with Squadron Green Putty.\*\* Both adhered well to the resin.

When the putty was dry, I wet sanded the parts with successively finer grades of wet-and-dry sandpaper, beginning with 400-grit and ending

\*Borden Inc., Columbus, OH 43215.

\*\*Squadron Mail Order, 1115 Crowley Drive, Carrollton, TX 75011-5010.

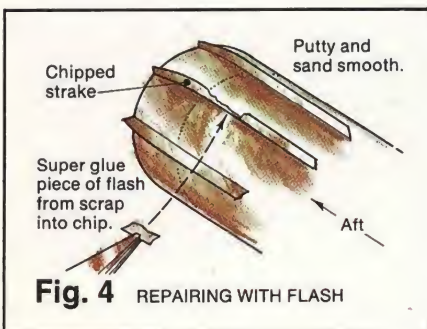


**Fig. 3** INTAKE REPAIR.

with fine Flex-i-Grit.\*\*\* I repeated this process of filling the holes with putty and wet sanding until they were no longer visible. This was the most time-consuming step in this project. Although I don't worry about panel detail in this scale, some modelers will want to re-scribe the lost detail before painting.

Besides being riddled with holes, the leading edge of the air intake was rough and uneven. When viewed in profile, the edge of the intake wasn't vertical, instead slanting back at the

\*\*\*Flex-i-Grit, K & S Engineering, 6917 West 59th Street, Chicago, IL 60638.

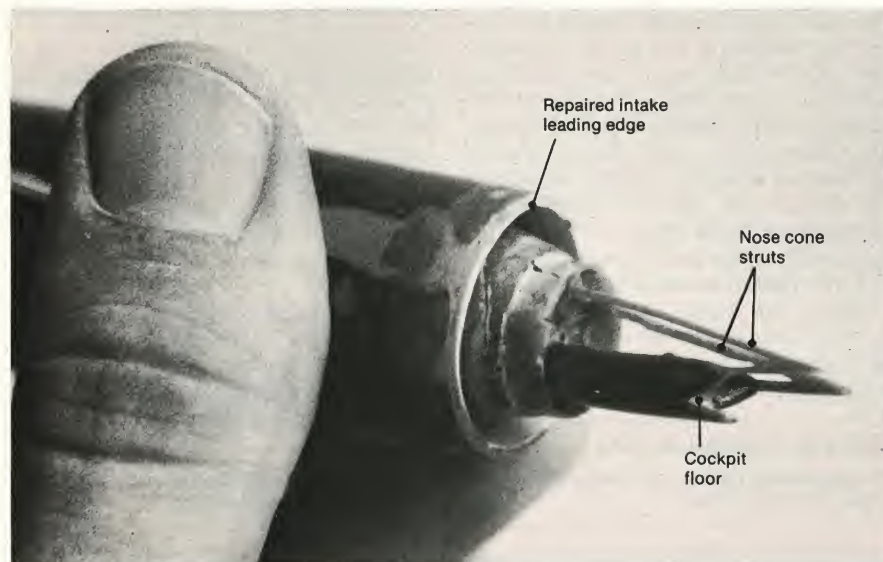
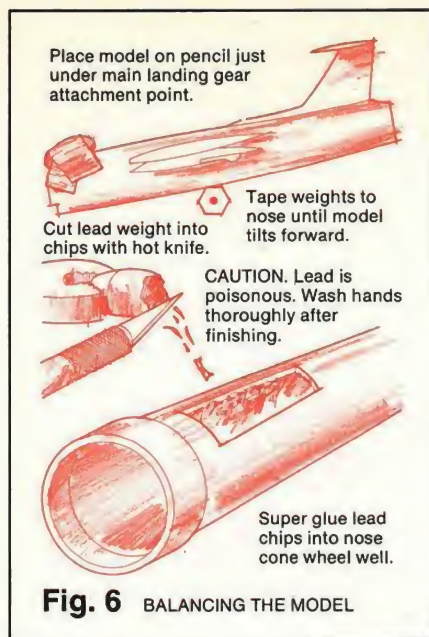


**Fig. 4** REPAIRING WITH FLASH

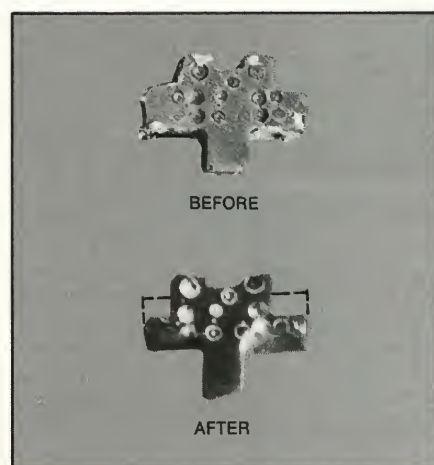


**Fig. 5.** The wings and tail planes are attached to the fuselage and the seams filled with Squadron Green Putty.

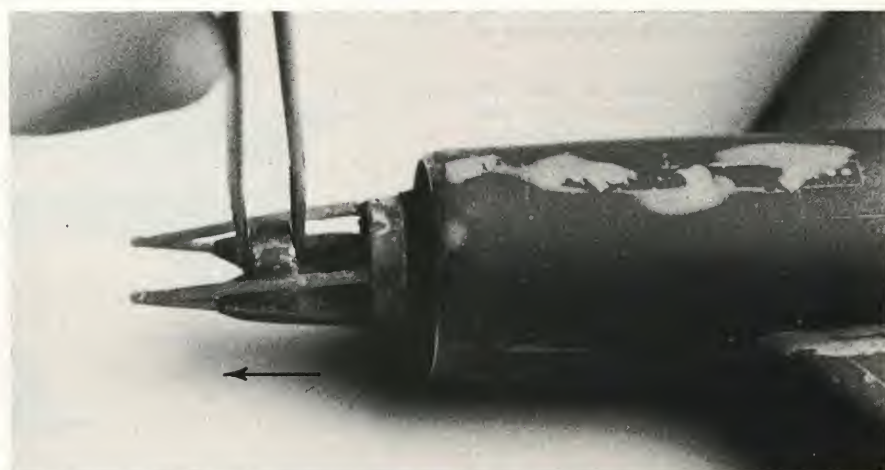




**Fig. 8.** The V-shaped nose cone struts were cut to fit against the cockpit floor.



**Fig. 9.** Scott had to trim the instrument panel to fit inside the strut apexes.



**Fig. 10.** Using tweezers, Scott inserted the instrument panel between the struts and pushed it forward to rest in the strut apexes.

bottom of the fuselage. To remedy this I cut a thin strip of .010" sheet styrene to fit the inside circumference of the circular air intake, Fig. 3. I super glued it to the inside lip of the air intake, making sure that it would provide a symmetrical leading edge. I smoothed over the area with putty and sanded it smooth.

Figure 4 shows how I used some of the scrap flash to repair a chipped fuselage strake.

**Assembly.** Following a tip in E. R. Staszak's *Building and Improving Vacuum-Formed Model Aircraft* (Kalmbach), I assembled the fuselage, wings, and horizontal tail planes all at once, resting each piece on a blob of non-hardening modeling clay. These clay blobs serve as a jig to hold the parts in proper alignment while cementing. I applied super glue to the joints with a toothpick. After these joints had set (about two minutes), I attached the vertical tail. Super glue forms a strong bond between the resin parts, providing a surprisingly sturdy structure.

Next, I filled the seams between the wings, tail surfaces, and fuselage with Green Putty, Fig. 5, and wet sanded them smooth. I washed the sanding residue from the model with water and dried it with a hair dryer.

The model needed extra weight in the nose to balance it on its landing gear. I taped fishing sinkers to the forward fuselage, balancing the model on a pencil, Fig. 6. A ½-ounce sinker was just right, so I chopped it into small shavings, stuffed the shavings into the nose gear well in the nose cone, and cemented them in place with 5-minute epoxy.

**An unusual cockpit.** I began by super gluing the part representing the cockpit floor and sides onto the front end of the fuselage, Fig. 7. The nose cone on the Leduc was supported by a tubular framework extending from the



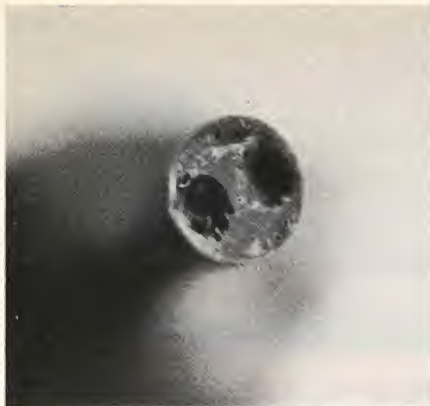


Fig. 11. Two holes for the struts were gouged out of the solid resin nose cone.

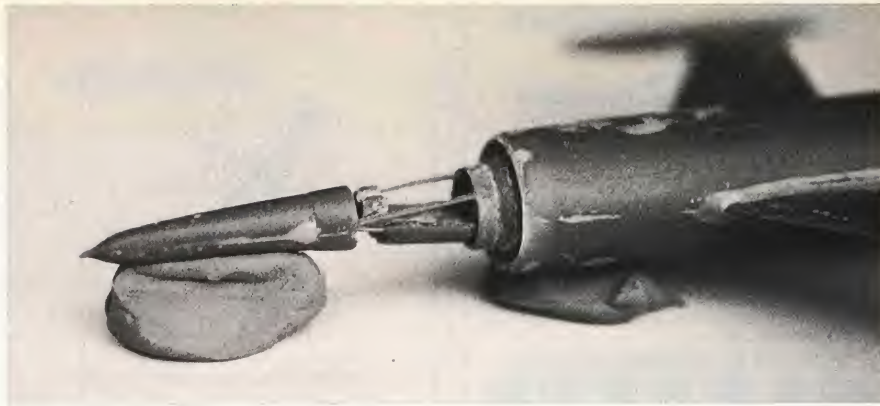


Fig. 12. Scott used modeling clay as temporary jigs to support and align the fuselage and nose cone as they set up.



Fig. 13. The ball turret gunner from the Airfix 1/72 B-24 Liberator fit perfectly in the cramped cockpit of the Czechmaster Leduc 022.



Fig. 15. The clear canopy halves were polished, placed over the struts, and faired into the fuselage and nose cone with putty.

rear of the cockpit to the nose cone. Four V-shaped struts were included in the kit but as far as I could tell, only two would be needed to represent the framework. Perhaps the extra pair is provided as a spare set.

I used the drawings to determine the positioning of the struts. Part of one leg of each strut was cut away to allow the struts to fit on the cockpit floor, Fig. 8.

I had to trim down the kit instrument panel to get it to fit between the struts, Fig. 9. After cutting, filing, and fitting, I inserted the instrument panel with a tweezers, pushing it forward to nestle in the apexes of the struts, Fig. 10. I attached the panel to the struts and the forward edge of the cockpit floor with super glue.

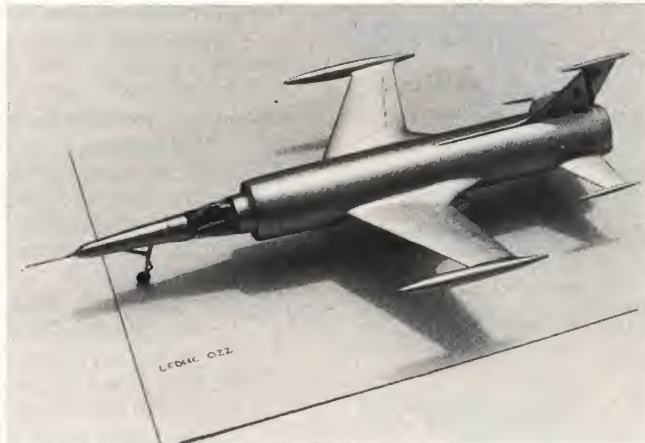
I used the hot knife to cut holes in

the back of the solid resin nose cone to accommodate the cockpit struts, Fig. 11. After determining the correct position and dry-fitting the struts, I set the fuselage assembly and nose cone on modeling clay jigs, Fig. 12, and glued them together with super glue.

I like to include crew members inside my models to add an element of proportion. For the pilot in this model I used

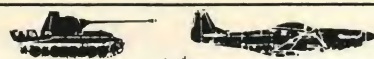


Fig. 14. Scott repeatedly primed, filled, and sanded the model until the surface was free of blemishes.



The Czechmaster model is an unusual addition to any model collection. For the mid-1950s, the Leduc 022 looked more like something from a science fiction novel than from a designer's pen.





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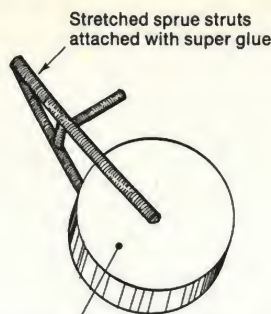
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Wheel cut from sprue with hot knife

Fig. 16 TAIL WHEEL

the ball turret gunner from Airfix's 1/72 scale B-24J Liberator (No. 5006), Fig. 13.

I airbrushed the entire model with Floquil R9 Primer, which revealed numerous holes and defects that needed more work. I repeated the fill, sand, and prime process until the model's exterior was cleaned up, Fig. 14. Next, I painted the cockpit interior and pilot figure, then glued him into the cockpit.

I cut the two canopy halves apart and improved their clarity by polishing them with Blue Magic Metal Polish,\* followed by a coat of Future Acrylic Floor Finish applied with a brush. I trimmed the canopy halves with scissors, then dry-fit the canopy halves on the model. I dry-fit the top half of the canopy first because the blister must be carefully placed on the center line. Then, I epoxied both halves of the canopy to the cockpit area. I used Elmer's Carpenter's Putty to fair in the edges of the canopy, Fig. 15, and carefully sanded them smooth.

After washing and drying the model one last time and polishing all surfaces with Blue Magic, I masked off the canopy area and airbrushed the entire model with undiluted Floquil R144 Platinum Mist. Next, I added the landing gear struts, wheels, and doors to the model. The kit didn't include the tiny tail wheel (for protection against overrotation on takeoff), so I built one from sprue, Fig. 16. (See box on page 33 for more on stretching sprue.) I painted the tires and insides of the air intake and combustion chamber flat black. The pitot tube was the final part to go on the model.

**Minimum markings.** The Leduc 022 was practically devoid of markings — only two stripes, a serial number, and the phrase "Rene Leduc 022" appeared on the left side of the vertical tail, Fig. 17. I used black Bishops Graphics self-adhesive .031" Microthin tape (No.



Fig. 17. The only markings on the Leduc 022 were on the left side of the vertical fin. Scott used Microscale railroad letters and graphic tape to duplicate the markings.

T211)\*\* for the pair of stripes on the vertical tail, but black decal stripe would be even better. For the letters and numbers I used Microscale railroad decal sheet No. 87-93 (Condensed RR Gothic Alphabet and Numbers).

My first resin aircraft kit not only provided an unusual model for my collection, but it was an educational experience as well! Modelers who are used to standard injection-molded kits should find that resin kits are challenging, but not as difficult as vacuum-formed kits. I'm looking forward to discovering more and better techniques for building resin kits.

FSM

\*\*Bishops Graphics, Inc., 5388 Sterling Center Drive, Westlake Village, CA 91359.



## Meet Scott Edwards

Scott has been a modeler for nearly 20 years, and remembers building his first vacuum-formed kit when he was just 11 years old. After graduating from the University of Tulsa with a degree in engineering physics, Scott moved to the West Coast for graduate work at the University of California, Berkeley. There, a built-up Monogram B-36 in a hobby store window rekindled his interest in modeling.

Scott is back in Oklahoma now, working as an engineer in Bartlesville. His wife Malinda is a teacher. Scott says that Malinda is glad that he has a hobby that "keeps me home with her and out of trouble."

\*Blue Magic, Paige Aviation Distributors, P. O. Box 5298, San Mateo, CA 94402.



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(Top) Before. The Dinky Toys Commander Starliner captures the Studebaker's looks, but has seen better days. (Above) After. After disassembling, stripping, repainting, adding tinted windows, and replacing wheels, the renewed toy fits in well with Wayne's 1/43 scale model car collection.

## From toy to model

### Refurbishing an old Dinky Toys 1954 Studebaker

BY WAYNE E. MOYER

**T**HE PHILOSOPHICAL differences between the collector and the modeler are rarely more sharply defined than in the area of die-cast "models" — especially the older models that were marketed as toys by Dinky Toys, Corgi, and others. The collector wants models in original condition — any modification, even a repaint in the original colors, destroys the value of the model. But the modeler wants the most perfect miniature representation regardless of modifications required.

For example, a mint, boxed example of the Dinky Toys 1954 Studebaker Commander Starliner can bring \$40.00 or more, while a good, slightly chipped one will bring \$25.00. The badly worn copy I found still cost \$15.00. After the work described in this article, its collector value is essentially zero, but it sure looks a lot more like the full-size car.

After comparing the Dinky Toys car to photos of the real thing, I found it

was a remarkably good model, accurate in outline, lots of cast-in details, a true-color two-tone paint scheme, and it was 1/42 scale which fit in well with my 1/43 scale collection. The entire body, including bumpers, was a one-piece casting with only a couple of small mold lines. The front and rear bumpers had been sprayed silver, but no other chrome trim was detailed. Probably the worst features were the lack of interior and windows and the traditional Dinky Toys white-rubber "mud and snow" tires.

**Disassembly and stripping.** The first step in my "ground-up" rebuild was to get the body off the chassis; that meant drilling off the flanged heads that held the stamped tin chassis to the die-cast body attachment posts, Fig. 1. That done, I snipped off one end of the axle to dismount the tires. The body had to be completely stripped. I tried overnight soaks in commercial paint remover and then in brake fluid. Both softened the 20-year-old baked enamel

but didn't remove it, so I tried spray-on oven cleaner (Mr. Muscle, in this case). The next morning big strips of soft paint were hanging loosely from the model; a few minutes in warm water and a scrub with an old toothbrush produced a clean body, Fig. 2.

The small mold lines inside the headlights and across the rear were filed off with needle files and the inside edges of the window openings were cleaned up at the same time. The die-cast body was much harder than white metal, so files were a must. After wet sanding the entire body with 400-grit sandpaper, I washed it, then "pickled" it in Du Pont Metal Conditioner\* in preparation for priming.

Next, I airbrushed the body with a thin coat of Floquil R9 Primer which revealed surface ripples, Fig. 3 (a spray-can primer would have been better in this case). I brushed on thick Du Pont 301S primer to fill the rough spots, then wet sanded the body thoroughly, Fig. 4, before priming again. A final sanding with 600-grit sandpaper and a touch-up with primer prepared the body shell for color coats.

**Repainting.** Die-cast models are rarely painted in accurate colors, but the original paint on the Dinky Toys Studebaker matched an *Automobile Quarterly* photo well. Before I stripped the model, I mixed Humbrol enamels to match the original colors. I sprayed the front part of the hollow interior pale

\*du Pont de Nemours & Co. Inc., Wilmington, DE 19898.



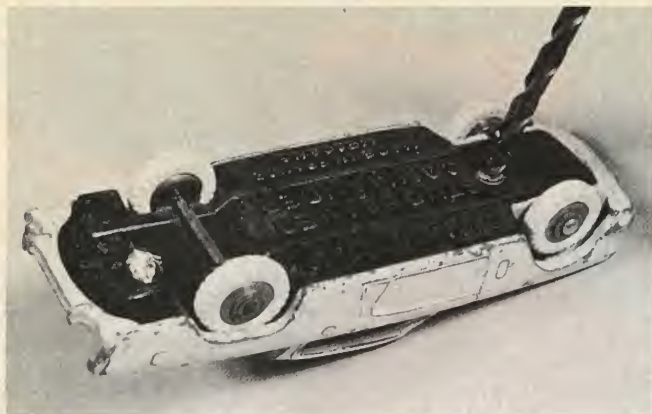


Fig. 1. To disassemble the model, Wayne drilled out the flanges that attach the baseplate.



Fig. 2. The model after the body has been stripped and scrubbed. Note Dinky Toys white knobby tires.



Fig. 3. The first primer coat reveals numerous rough spots and small mold lines. Here, Wayne uses a round file to clean up the headlights.



Fig. 4. A thorough wet sanding smooths out the body surface. The model was primed again and checked for rough areas before being painted.



Fig. 5. Before stripping, Humbrol paints were mixed to match the original Dinky Toys colors, which were close to the Studebaker factory colors.



Fig. 6. Wayne used Bare-Metal Foil for the chrome trim. Here, he has applied an oversized piece of foil to the front bumper. Next, he'll burnish the foil, then trim away the excess with a sharp knife.



The finished model next to the author's next restoration project — a Dinky Toys Studebaker Golden Hawk. Replacing wheels and repainting the body did wonders on the old toy.

semigloss green, masked it, and sprayed the rest of the interior and the stamped chassis flat black.

After the interior was dry, I masked it and airbrushed the body light green (spray cans can be used if a suitable nonmetallic color can be found). I allowed this coat to dry a couple of days, then masked the lower body and applied the dark green top color, Fig. 5.

When the body shell was thoroughly dry, I covered all chrome trim including head and taillights with Bare-Metal Foil.\* The bumpers were too complex to allow a perfectly smooth job, but the foil looks better than paint, Fig. 6. Floquil Lustre-Glaze Red (L3) over the foil gave an excellent taillight

lens effect — I wish I could find a similar paint for headlights! The foil trim around the side windows looks a bit heavy in 1/42 scale; those with a very steady hand may prefer silver paint. Finally, a coat of Future acrylic floor finish was brushed on with a cotton swab to seal the foil to the paint.

The Dinky Toys Commander measures out to 1/42 scale, so I robbed an old AMT Junior kit of wheels and tires and added Auto-Buff wide whitewalls (no longer available) to them. I admit that the correct Studebaker wheel covers have me stumped — I'm still looking for something acceptable.

If you have good references or access to a '54 Commander, it's possible to scratchbuild an interior from old AMT 1/43 scale kit parts. Since I had neither, I decided to smoke the windows to

help hide the drawbacks of the interior. I sprayed a strip of clear acetate with Floquil Lustre-Glaze Ebony (L7) thinned with Dio-Sol and cut it to fit the window openings. The windscreen and side windows were easy, but the rear window took several attempts. I used Hot Stuff Super T to glue the windows in place (unpainted side out) and the body shell to the chassis.

The Dinky Toys model captures the timeless lines of the original Raymond Lowey-designed body; good chrome trim, fresh paint, realistic tires, and some "glass" all help to make it an attractive model. It started life as a toy, was thoroughly played with and enjoyed before being discarded, and after resurrection is an attractive model of an American car that's not likely to be available any other way.

**FSM**

\*Bare-Metal Foil Co., P. O. Box 82, Farmington, MI 48024.



Dennis applies a tiny strand of clear stretched sprue to the rigging of his Frog 1/500 scale H. M. S. *Hero*. Diluted white glue applied with a fine brush anchors the strand and the excess is trimmed off with a nail clipper. (Below) The superstructure of the author's 1/400 scale Heller *Dunkerque* shows lots of rigging.

## Realistic warship railings and rigging

Both photos this page, FINESCALE MODELER: Paul A. Erler

Using stretched sprue and brass wire for small-scale details



BY DENNIS MOORE

**R**AILINGS AND RIGGING are among the details that are too fine to be produced in small-scale injection-molded warship kits. Some kits include solid railings with raised stanchions and rails with recessed areas in between, but these don't look convincing in any scale. Many modelers hesitate to eliminate the clumsy kit parts due to a lack of suitable replacements.

Most readily available, modern ship models range between 1/700 and 1/400 scale. The smaller the scale, the bigger the problem of accurately simulating fine details. If you blow up a photo of a large vessel to 1/700 scale, it's difficult, if not impossible, to see the handrails and most rigging. Such features are easier to see in 1/350 or 1/500 scale, and adding them to models in these scales is easier.

**Materials.** Several materials can be used to produce railings and riggings on small-scale ship models. I've seen human hair used on 1/600 scale models, but not all of us have a source of long, straight gray hair. Hair is likely to shrink and curl with changes in temperature and humidity. Although this





Heller's 1/400 scale German cruiser *Hipper* shows off the author's rigging and railings. Note strands of rigging attached to other strands.

isn't a problem with railings due to the short gaps between stanchions, it is a problem with rigging masts. Common sewing thread is too thick and fuzzy. Surgical thread is better, but still too thick for anything smaller than 1/200 scale.

I use brass wire for stanchions and stretched sprue for rails and rigging. The brass wire I use for stanchions comes in a wide variety of gauges good for most scales. For most of my ship stanchions I use Detail Associates\* .012" brass wire. Brass wire is easy to cut using a nail clipper, Fig. 1. Although I have seen stretched sprue stanchions, brass wire is better because its thickness is consistent and it is more rigid, providing better support. Stretched sprue (see the box on page 33) is my choice for hand railings and rigging in 1/500 up to 1/350 scale because it is thin, easily bent around corners, doesn't fuzz, and the raw material comes with most kits.

**Installing stanchions.** First, I cut the brass wire into dozens of pieces — the height of the stanchions is determined by the scale of the model. Mounting stanchions is easy, but unbelievably tedious. I use an X-acto pin vise and a No. 80 or 78 drill bit to drill holes in the deck edges to mount the stanchions. Since these bits are fine and easy to break, I keep spares on hand. Mascot\*\* (formerly Maxon) drill bits can be purchased in quantity rather than as part of a set.

\*Detail Associates, P. O. Box 197, Santa Maria, CA 93454.

\*\*Mascot Division of Grobet File Co. of America, Inc., 750 Washington Avenue, Carlstadt, NJ 07072.

To establish the distance between stanchions, I preset the distance on a drawing compass. (You should have the hull and the deck house modules built and painted at this point — it's easier to glue the deck houses down after they have been railed.) I begin at the tip of the bow, using the compass to mark where the holes are to be drilled. I walk the compass along the main deck till I run out of stern, then repeat the process on the other side of the deck, making sure the stanchion locations are opposite those on the first side.

As you move your eyes along any deck, look for structural changes such as anchor fittings, tie-downs, cable



FINESCALE MODELER: Paul A. Erler

Fig. 1. Dennis makes stanchions from fine brass wire available from model railroad shops. The soft brass is easily cut with a nail clipper or scissors.



Fig. 2 ATTACHING RAILINGS

housings, or the length of a smaller upper deck before drilling. You may have to make subtle changes in distance between stanchions to avoid these obstacles.



Fig. 3. The top rail of the main deck is finished off as the strand of stretched sprue is glued to the last stanchions on the bow. Diluted white glue applied with a fine brush dries quickly and is surprisingly strong.





**Fig. 4.** The upper deck of Heller's 1/400 scale Z-31 is a good example of railing that goes around obstacles. A touch of liquid plastic cement softens the sprue, allowing it to be bent around the brass stanchions.

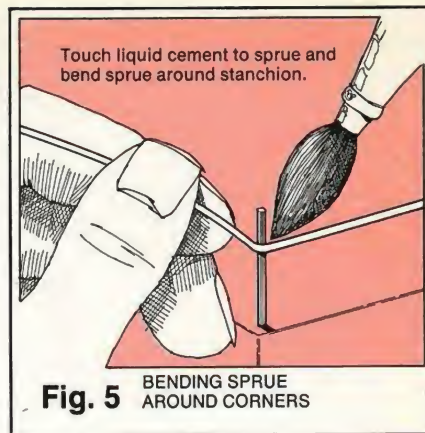
After all the holes have been drilled, I attach the stanchions to the decks with Krazy Glue cyanoacrylate cement. I make a puddle of glue on a piece of masking tape stuck to newspaper. I hold each brass stanchion with tweezers, dipping one end into the glue several times, and drop it into one of the holes. Check the alignment as soon as the stanchion is in place because the glue sets up quickly. Next, I check the height; if a stanchion is too tall, I trim it with a nail clipper. If it is too short, I wiggle it free and reinsert. Once all of the stanchions are in place, they can be painted whatever color is desired.

**Rails.** I use stretched clear plastic sprue for my railings and rigging — it stretches best and holds its shape better than colored plastic. In small scales, clear sprue gives a hint that something is there without overwhelming the model as colored sprue would.

The first time you use this technique

of attaching sprue to stanchions, I suggest that you work on the main deck of the vessel first, since the rails there are fairly straight. It's a lot easier to attach the rails if you lay the hull over on its side. Start with the lowest rail first. I use slightly thinned white glue to attach the rails to the stanchions. Using a 0000 brush, I place a small amount of white glue on the first bow stanchion and touch the end of sprue to the glue, Fig. 2. A small amount of white glue sets up quickly and is surprisingly strong.

Once that first piece has dried in place it's just a matter of repeating the process several hundred times as you go around the deck, Fig. 3. Check for alignment problems when all of the strands are in place. The nice thing about white glue is that it is water soluble — if a rail is out of parallel, the bond can be loosened with a little water on a brush and reglued.

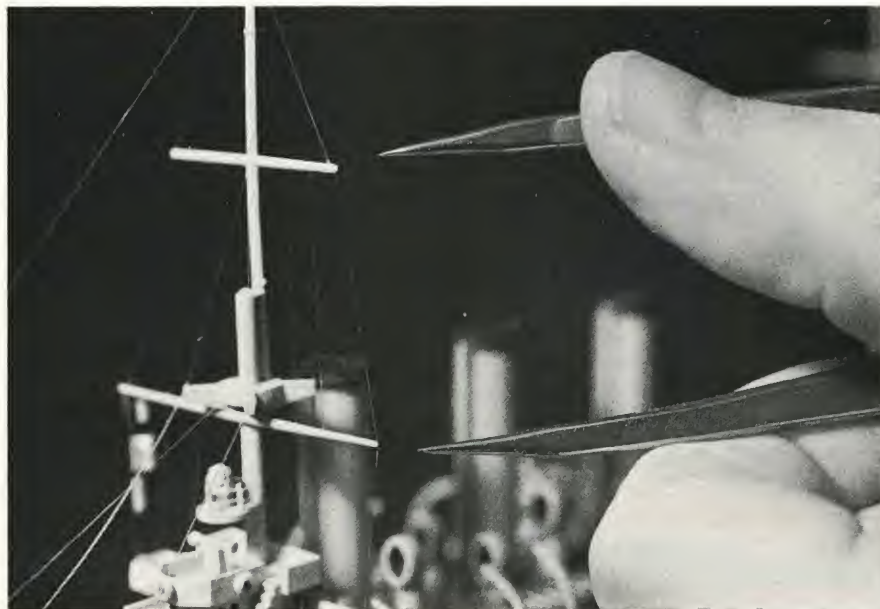


**Superstructures.** Since the upper decks are smaller and contain funnels, gun turrets, catapults, gangways, and lifeboats, the railings seldom run in long straight lines as they go up, down, and around these features, Fig. 4. There are two ways to attach small sections of railing: measure the distance of a section with a compass and then lay in the appropriate length of sprue, or melt the sprue with liquid plastic cement at the point where the railing changes direction.

I find the latter technique easier, but be careful when applying the cement to prevent damaging the paint or melting through the sprue. I use IPS Weld-On #4\* because it works slower than other liquid cements. Just a small dab of it right where the direction changes is usually enough to soften the sprue sufficiently to bend it around a corner, Fig. 5. If you do melt through, don't panic; just attach the melted end of the sprue to the stanchion that you were bending around.

Now you see why I suggested leaving off those deck structures until after the railings have been installed; it's a lot easier to do this away from the main deck.

After completing all the railings, overspray the entire model with your choice of clear flat or gloss. Do this before you rig the masts. Since the distances bridged by the sprue rails are small and they are glued in place at every stanchion, any distortion the overspray causes will be insignificant. However, the mast rigging bridges larger gaps, and an uneven coat of overspray can cause the rigging to curl after slight changes in temperature. (Even temperature extremes have little effect on oversprayed rails and unsprayed rigging — I hauled two ship models in an un-air conditioned car from Wisconsin to the 1983 IPMS national convention in Phoenix, Arizona. The temperature got well above 100 degrees, but as



**Fig. 6.** Dennis uses a drafting compass or dividers to measure each piece of sprue for rigging masts.

\*Industrial Polychemical Service, P. O. Box 471, Gardena, CA 90247.





A



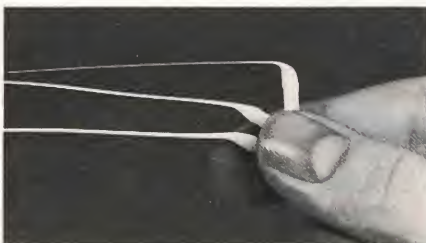
B



C



D



E



F

## STRETCHING SPRUE

Stretching sprue is an easy process that calls for nothing more than sprue (the tree that holds the parts in an injection-molded kit) and a lighted candle. Select a three-inch piece of clear plastic sprue. The piece must be long enough to avoid burning your fingers in the candle flame. The trick to making satisfactory stretched sprue is to heat the plastic evenly. Hold the sprue over the flame and roll it with the tips of your fingers so that all sides of the center section are heated (A). Note that the tree begins to appear glossy and feel soft (B). Now, remove the sprue from the flame and pull the ends apart.

If you have done it right you will have a length of sprue the span of your arms and hair thin (C). I can't really tell you how fast to move your arms apart when pulling the sprue; that's something you'll have to learn from experience. Needless to say, the finer the sprue that you can pull, the better your rigging is going to look. If the sprue breaks as you pull it, it hasn't been heated evenly or you pulled too fast (D). If the sprue should catch fire while you're heating it, just blow the flame

out and start again. Any leftover stretched sprue can be taped to a wall or basement rafter.

Stretched sprue has more applications: rigging for biplane models, antenna wires on aircraft and armor, ignition wires on automobiles, and so forth. With practice, you'll be able to control the thickness of the sprue by varying the speed of the pull and the length of time heating over the flame (E).

A technique I call "bouncing" allows the installation of stretched sprue in hard-to-get-to places, such as between interplane struts on a biplane. Simply cut a piece slightly longer than needed and anchor each end in position. When the adhesive at each end is dry, place a lighted cigarette, incense stick, or firecracker punk near the sprue (F). The heat causes the sprue to sag momentarily, then pull taut. It takes a little practice to know just how close to bring the heat source. I don't recommend it on ship rigging since a tight piece of stretched sprue may bend masts and yards out of alignment.

*Dennis Moore*

long as I kept the models out of direct sunlight, I had no problems.)

**Rigging the masts.** I use a drafting compass to measure the distances between masts, from masts to yards, and from yards to deck, Fig. 6. Rigging on a real ship gently sags between masts, so I don't recommend tightening the sprue by "bouncing" it with a hot object. This may cause problems when there are several lines of rigging running side by side or under each other. The heat from your hot knife or cigarette will, as often as not, bounce the wrong sprue, or produce a kink, forcing you to replace the kinked section. Bouncing a sprue also might place too much tension, causing a yard to be pulled around or a mast to lean.

The method I use to attach rigging lines is exactly the same as for mounting railings. Just a small dab of white glue while holding the line in place for a few seconds does the trick. Since sprue sometimes tends to curve after it

is cut, make sure that the curve becomes the basis for the sag, Fig. 7. After the rigging lines are dry, flags and other sprue rigging lines can be attached to them using white glue.

All of the steps that I have described

are unbelievably slow, boring, and at times, nerve-racking, so don't overdo things. Your patience and the hours that you spend on railing and rigging will be amply rewarded by the beautifully realistic models on your shelf. **FSM**



Fig. 7. Stretched sprue's tendency to sag is used to represent the natural sag in long lines of rigging. Tightening these lines would be unrealistic and could bend the masts.



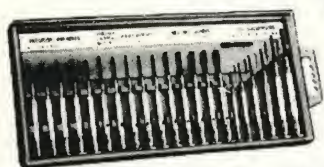
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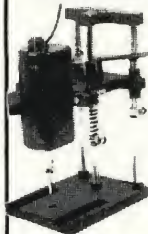
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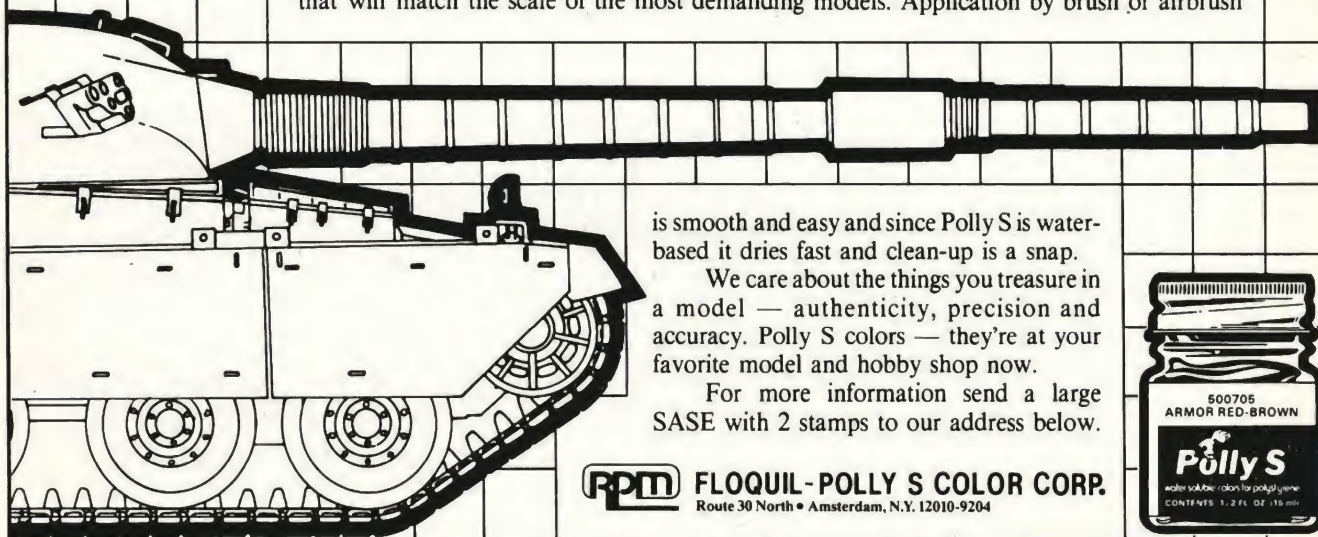
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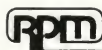
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Conducted by Paul Boyer

**More on Model Master paints.** Perhaps I can help Dennis Blake with his problem using Testor Model Master paints (FSM Clinic, January/February 1985). I mix one part Top Coat (in the Model Master car paint line) with two parts paint and three or more parts Floquil Dio-Sol. The paint flows better through my double-action, internal-mix airbrush and it's easier to spray fine lines. Since I haven't tried it with all colors, the thinning ratio might change with different pigments.

Charles Costa

**And . . .** I add a little Du Pont Slow Drying Enamel Reducer (38325) to Testor Model Master paints to improve spraying performance. I don't know what percentage I'm using — I just add until it looks right.

A. E. Griffin

Also, Testor has announced a new formula Model Master Airbrush Thinner that is slower drying; this should help keep the paint from drying in the airbrush tip and allow better spraying performance.

Paul Boyer

**Hustler and Stratojet.** Does anyone make 1/72 or 1/48 scale models of the Convair B-58 Hustler and the Boeing B-47 Stratojet? I have built the old Comet, Monogram, and Revell kits but hope for something more detailed.

Jason Arndt

You're in luck! Minicraft-Hasegawa has had a 1/72 scale B-47 kit now for about 15 years. This year you will see a 1/72 scale B-58 Hustler from Testor-Italeri and a 1/48 scale Hustler from Monogram. Your local hobby store should stock all these kits.

P. B.

**Hot knife.** In Francois Verlinden's *On Target — The German Tiger Tanks*, the author uses something called a "pyrograph" to apply Zimmerit to models of German armor. I've looked everywhere for this item, with no luck. Any suggestions?

James L. Turner

The item you are looking for is a hot knife. (You'll find other books referring to a "pyrogravure" — it's the same thing, too.) You can make one out of a woodburning set and an old knife blade or purchase a commercial unit. Write Santos Miniatures, P. O. Box 4062, Harrisburg, PA 17111, or Auto World, 701 North Keyser Avenue, Scranton, PA 18508, for information on hot knife tools.

P. B.



**What is scale?** I realize that models are produced in scale, but I'm not sure what this means. What does the scale expressed on the box top mean? Also, are scale rulers available?

Jack Falduto

Scale is an expression of relative size of the model. A 1/48 scale model is 1/48th the size of the real thing; in other words the real thing is 48 times as big as the model. If the length of a 1/48 scale model is 1 foot, the real thing would be 48 feet long.

It's easy to figure the size of a model. Let's say you wanted to know how big a model of a Lockheed C-5A Galaxy would be in 1/72 scale. From your reference sources, you find that the length of the C-5 is 247 feet 10 inches. Using a pocket calculator or long-hand math, multiply 247 (feet) times 12 and add 10 (inches) to convert the measurement into inches, then divide by the scale (72):

$$247' \times 12 = 2964" + 10" = 2974" \\ \div 72 = 41.3"$$

So a 1/72 scale C-5A would be 41.3 inches long; imagine it in 1/48 scale — nearly 62" long!

Scale rules are available from Murphey Model Products, P. O. Box 8181, Cincinnati, OH 45208. Rule I has 1/72 and 1/48 scale, Rule II has 1/35 and 1/32, and Rule III has 1/43 and 1/25. There are also model railroad scale rulers and some architect's scales are useful.

P. B.

**Metal primer.** I'm starting to work with metal accessories and wonder if standard model paints will adhere sufficiently. Should I use a metal primer? Should I do anything special to metal parts before painting? I don't have an airbrush so anything you might suggest would have to be applied with a brush.

Thomas Dinackus

The keys to getting paint to stick to metal are a clean surface, a tough paint, and a surface that won't move (bending, scraping, and temperature extremes could cause the paint to flake off). First, wash all metal surfaces with soapy water, then wipe with denatured alcohol or lacquer thinner. This will eliminate mold release lubricants and fingerprints. You can hand brush Floquil colors on metal and they should stick pretty

well. Polly S Metal Primer (PF6) helps Polly S color coats adhere to bare metal surfaces. Standard enamels should stick satisfactorily but may be difficult to apply with a brush.

Another approach is to prime the metal parts with an aerosol primer, then brush paint the color coats with your favorite enamels, acrylics, or lacquers.

P. B.



Shep Paine

**Weathered armor.** How can I get an effective metallic look of worn, chipped-off paint on my 1/35 scale armor models?

Thomas Dinackus

Although paint on real armored vehicles is hardly indestructible, this weathering effect is often overdone on armor models. The paint rarely chips off in flakes (as is sometimes the case with aircraft); the actual appearance is more of a scuffing, and occurs in those areas where crew traffic is heaviest — around hatches and fueling points. In most cases the effect is so subtle that it would be barely visible in 1/35 scale. While you don't want to ignore it, don't overdo it either.

Using a mixture of silver and black, dry the brush almost completely by wiping most of the paint off on a piece of paper, then scrub the area with the dry brush. The remaining nearly dry pigment will produce a realistic worn area.

Shep Paine

**Plastic patrollers.** My dad was in the Navy and flew in P2V-7 Neptunes and P3V Orions. Are there any models of these aircraft?

Jim Pozniak

Revell used to make an odd-scale kit of the Neptune but it is no longer available. Revell also makes an odd-scale kit of the



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Orion (kit No. 4428) which is in its current catalog. But if you would like both kits in the same scale, check out Hasegawa's 1/72 scale P-2H (P2V-7) Neptune kit (No. K6) and P-3C (P3V) Orion kit (No. K15). Both are excellent, but are not suitable for beginners. *P. B.*

**Armor information.** I'm trying to find 1/35 scale drawings and field manuals for the 155 mm Long Tom howitzer. Do you have a source? *Richard Donovan*

Do you know a source for photos of the interior of the German Panzer IV? *Chuck Seyars*

You might try writing these companies and agencies. I'm not sure that they have the items you're looking for, but they have wide selections of photos and plans: Military Photo Archives, John Beatty, W150 S7000 Cornell Circle, Muskego, WI 53150; Technicolor Government Services, Inc., DAVA-W Still Depository, Customer Services, Defense Audiovisual Agency, Production, Distribution and Depository Activity, Building 168, NDW, Washington, DC 20374; and Henry S. Queener, Jr., P. O. Box 50203, Nashville, TN 37205. *P. B.*



**Camouflage patterns.** Where can I find a book of drawings that shows the patterns for painting modern jets and helicopters along with the Federal Standard color numbers? *Cary Smith*

Unfortunately, no one source has the information you seek. If you have a particular aircraft in mind, look into some of the monographs (books about a single aircraft subject) that are available. T. O. 1-1-4 (above) is an official technical publication for the United States Air Force that covers camouflage and markings for all the USAF aircraft currently in service. It includes the sizes of lettering and location of all markings along with FS 595a color numbers and camouflage patterns. Since this is an official USAF document, you may have trouble getting one. Sometimes Air Force recruiters can help you contact a source. *P. B.*

**KB-50 model.** I have searched in vain for a 1/72 scale kit of the Boeing KB-50. I bought a White Eagle B-50D vacuum-formed kit, but it lacked the jet pods, external refueling tanks, dorsal and ventral radomes, and the modified tail cone of the refueling aircraft. Do you have any suggestions? *David Taylor*

An accurate conversion of the B-29 to a KB-50 could be an expensive proposition — in both time and money. The late Dave

Boksanski did a similar conversion when he made his B-50D by mating the Airfix B-29 with wings, tail, and engines of the vacuum-formed RAREplanes KC-97 (Summer 1983, FSM). It can provide the jet pods and refueling tanks as well, leaving you with only the radomes and tail cone to scratch up from wood or styrene. Unfortunately the \$24.00 RAREplanes kit is out of production and hard to find. White Eagle had scheduled a KC-97 kit as well, but I haven't seen one yet. *P. B.*



**Israeli armor color.** What is the proper color for Israeli armor? *George Reynolds*

Israeli "desert sand" is an unusual mixture of gray and tan, designed to be effective against both the gray terrain of the Golan Heights and the yellower sand of the Sinai. Humbrol Khaki Drill (HM8) is close, but you can combine equal parts of your favorite yellow and gray, too. Don't alter the color too much when you apply a wash or dry-brush weathering over it. *Shep Paine*

**Tape too strong.** No matter what type of tape I use to mask my models (Scotch Magic tape, drafting tape, masking tape), I always pull fragments of paint off the plastic. What can I do to prevent this? *Marvin Leftick*

Your problem is a common one with no easy solution, but try these. Before applying the tape to the model, repeatedly apply it to your fingers — the oil from your skin will decrease the stickiness of the adhesive. Try using thin strips of tape along the color line and cover the rest of the masked area with paper or Saran Wrap. This decreases the area exposed to the tape. Try one of the liquid masking agents available. Lastly, use a lacquer-base paint such as Floquil. Lacquer bites into the plastic slightly (you can only airbrush it, though) and doesn't pull up as easily. *P. B.*

**1/48 scale Vigilante?** I have become fascinated with the North American RA-5C Vigilante but have had no luck finding a 1/48 scale injection-molded replica. Do you know if anyone makes a kit of it in this scale? *Duke Bevard*

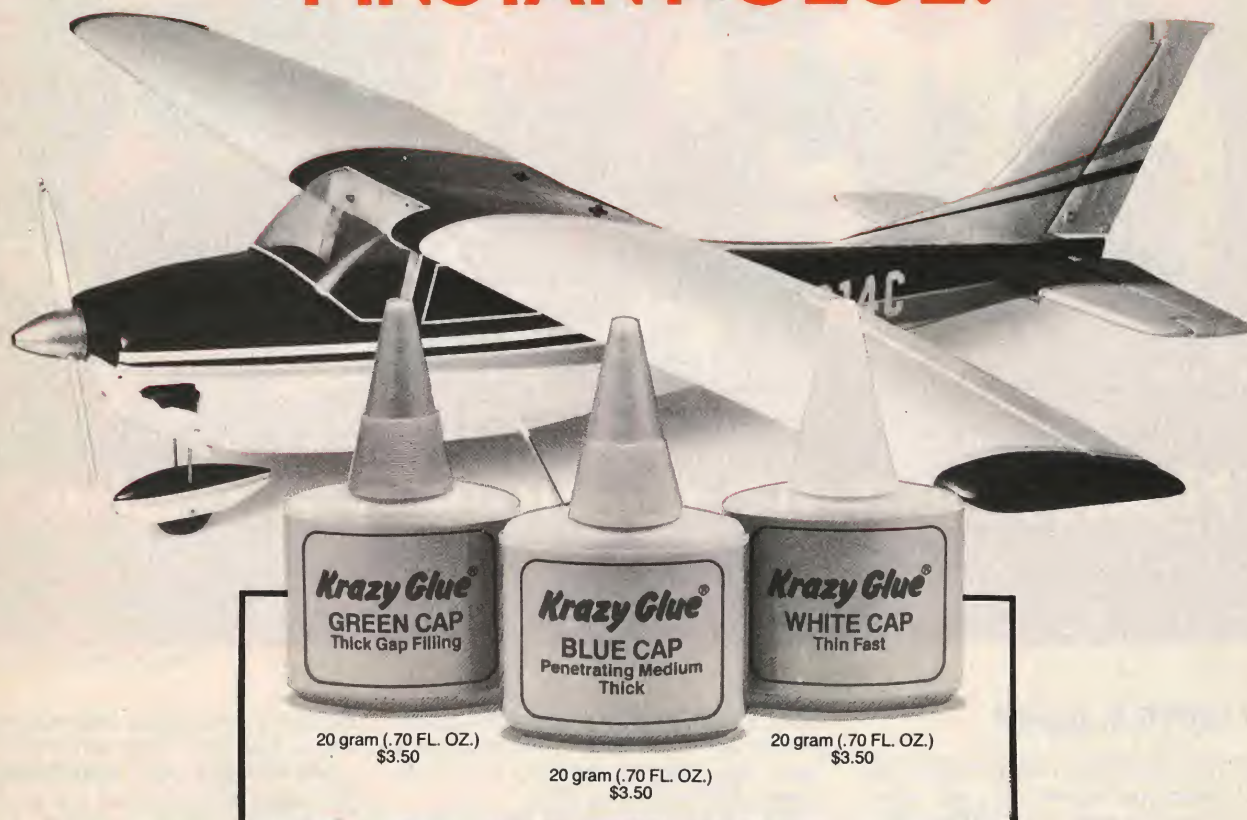
No 1/48 scale kit of the Vigie has been produced yet — not even a vacuum-formed one. There are 1/72 scale kits by Hasegawa and Airfix, and a couple of odd-scale A-5As from Monogram and Revell. There was also a 1/144 scale RA-5C by Otaki.

I wouldn't give up hope for a 1/48 scale kit; try writing to Monogram, Hasegawa, Revell, and ESCI to suggest they produce a kit in that scale. *P. B.*

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# Modeling with cyanoacrylate glues

Super techniques for super glue

FINESCALE MODELER: Paul A. Erler

BY LLOYD S. JONES

**C**YANOACRYLATE ADHESIVES, commonly known as super glues, are relatively new to modeling. They have been around for a while, but now they are priced within reach of the average hobbyist. When first developed in the early 1950s, the cost of a bottle of super glue was far beyond the means of most modelers. Today, production of the material has increased so it is less expensive. As you will see in this article, super glues can be used to solve a number of modeling problems.

Just what are super glues? Chemically, they are liquid monomers which polymerize rapidly in the presence of moisture. Water vapor in the air acts as a catalyst, changing super glue from liquid to solid in a few seconds. In the early 1950s, chemists at Eastman Kodak accidentally mixed up a batch of ethyl cyanoacrylate fluid during a search for rapid-setting film-splicing cement. During their experiments, super glue was placed between two pieces of glass for examination and they were surprised at its rapid polymerization. Further development resulted in Eastman 910, the first commercially available super glue. Nowadays there are dozens of brands, and according to Ste-

phen Foster of Crazy Glue, Inc., sales of this family of adhesives have grown from less than \$1 million in 1974 to nearly \$50 million in 1980.

Most hobby super glues are ethyl (as opposed to methyl or iso) cyanoacrylates. For our purposes, the main difference between ethyl and methyl is proper storage. Both types can be stored in a refrigerator to extend their normal shelf life from about six months up to a year. However, ethyl can be frozen to extend its useful life indefinitely. Since moisture in the air is the catalyst for these adhesives, it is im-

portant to keep them properly capped, both in and out of the refrigerator.

**Advantages and disadvantages.** The main advantage of super glues is speed — construction, filling, and repair take much less time using super glues. They bond dissimilar materials, such as plastic to metal, metal to wood, and so forth. Cyanoacrylate bonds are strong, but despite its excellent tensile strength, super glue does not have great shear strength — it can be broken free easily with sideways stress, Fig. 1.

Another significant problem is the

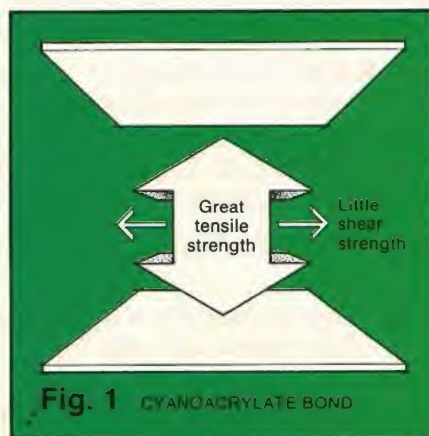


Fig. 1 CYANOACRYLATE BOND



FINESCALE MODELER: Paul A. Erler

**Fig. 2.** Sometimes a white frosty deposit will form on super glue as it sets. "Chlorosis" can be removed by wiping the area with a solvent or scraping it off with a knife.





FINESCALE MODELER: Paul A. Erler

Fig. 3. Super glue accelerators. Most come in spray bottles but they can also be applied with a brush or toothpick.



FINESCALE MODELER: Paul A. Erler

Fig. 4. Super glue solvents are based on acetone or nitromethane. A cheap alternative is acetone-based nail polish remover.

tendency of super glue to fog around the edges of a joint, Fig. 2, especially noticeable inside cockpit canopies. This is chlorosis, the formation of white precipitate of cured polymer deposited on or near the bond. In spite of its appearance, it does not affect the strength of the bond. Chlorosis is caused by using too much adhesive, by high humidity, or by trapping the adhesive in an airtight area as it cures. The latter commonly occurs when internal parts are cemented and the fuselage is sealed around them. If the canopy is attached before the super glue has cured, chlorosis will fog the inside of the canopy.

A well-ventilated, dry work area helps prevent chlorosis. The fumes from super glues and their accessories can be irritating so a small electric fan or hair dryer blowing across the workbench will help prevent chlorosis and allow you to breathe easier. (See the box on page 40.) The white deposits can easily be removed if you can get to them — a gentle wipe with denatured alcohol, acetone, or super glue solvent will eliminate them.

Using a super glue accelerator, Fig. 3, reduces the formation of chlorosis since it makes large applications of glue set up quicker. When attaching a canopy, use small drops of super glue applied with a pin. The canopy attachment doesn't have to be that strong anyway; how often do you pick up a model by its canopy?

If you need to dissolve or remove dried super glue, use a super glue solvent, Fig. 4. These liquify the adhesive, allowing you to remove or relocate the part. Any super glue remaining when the solvent evaporates continues to hold as a cement.

**AWACS project.** I built my 1/144 scale Boeing E-3A Sentry (AWACS), Fig. 5, using parts from the Airfix 707 (No. 04170-0) and Revell AWACS (No. 4422) kits. The combination of these

kits produced an accurate AWACS and presented an excellent opportunity to solve modeling problems with super glues.

For this project, I used Krazy Glue

brand cements and accelerator. Krazy Glue Green top is slow setting (24 seconds), thick, and capable of filling small gaps. Krazy Glue White top is fast setting (5 to 20 seconds), water



Fig. 5. Lloyd's completed 1/144 scale Boeing E-3A Sentry (AWACS) was built using super glue as a filler as well as an adhesive. Parts from both Revell's AWACS and Airfix's 707 kits were combined to make an accurate replica.

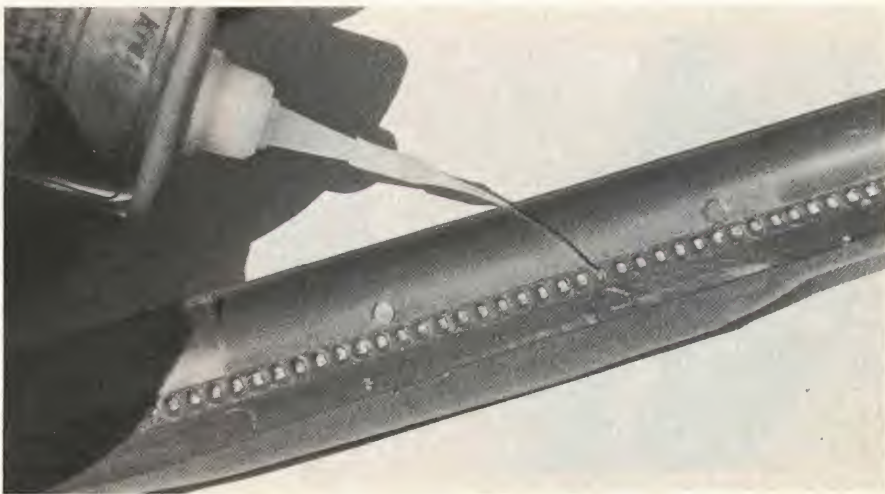


Fig. 6. Gap-filling super glue was used to fill the airliner windows in the Airfix fuselage. Cellophane tape was used outside the fuselage to hold in the glue.



## THE HAZARDS OF SUPER GLUE

Recently, rumors have circulated that cyanoacrylate glues (super glues) can release toxic gases, cause cancer, ignite at relatively low temperatures, glue your fingers together forever, and so forth. There are certain dangers in using any chemical. For instance, water can kill you — if you get enough of it in your lungs.

In September, FSM wrote to 15 super glue manufacturers and distributors, asking them about super glue hazards. Four companies responded. We also wrote to the U. S. Consumer Product Safety Commission, but did not receive a response.

The rumor that mixing super glue and baking soda releases cyanide gas is groundless. One manufacturer described the white smoke as "a precipitate from the exothermic reaction and rapid curing of the polymers." In other words, the baking soda makes the cyanoacrylate set rapidly and the fumes and tiny particles of cured super glue are given off. These particles also cause chlorosis (see main text).

Another said "there are no free cyanide radicals in, or given off by super glues." Yes, they are acrid fumes that irritate mucous membranes in the eyes, nose, and throat, but they are not cyanide. If they were, a lot of you (and I) would be long dead. Cyanide gas is not an accumulative poison like arsenic — absorb a little today, a little tomorrow, and eventually you're dead. Cyanide is quick, deadly, and NOT released by super glue.

There is no evidence to support the rumor that super glues are carcinogens (cause cancer). Perhaps it's too early to tell. Super glues have been used as chemical sutures in surgery, and I doubt that surgeons have been lacing our bodies with a known carcinogen.

The flash point (temperature at which a substance can ignite under ideal conditions) of most hobby super glues varies between 180 and 200 degrees Fahrenheit. By comparison the flash point of mineral spirits (enamel paint thinner) is 120 degrees Fahrenheit.

That's not to say that these chemicals don't deserve lots of respect. Super glues are powerful adhesives and must be handled carefully. It's possible to bond a model to your skin, skin to clothing, or skin to skin. If you do get stuck to something, don't panic. If you try to rip open the bond, you're likely to lose a couple of layers of skin. Eventually, the oils from your skin will loosen the bond or you can dissolve it with one of the commercially available super glue solvents, acetone, or nail polish remover.

If you get super glue in your eye, it will immediately shut since it is irritated by the substance. Immediately rinse your eye with lots of water and call a physician. If your eyelids are glued shut, don't try to pull them apart and don't flush them with super glue solvents of any kind. Again, don't panic; the natural moisture in the eye will break down the bond and the eyelids will open in a few days.

Most super glue containers include safety instructions — make sure you read them before using any super glue. And if your household includes small children or curious pets, make sure these adhesives — along with other potentially dangerous modeling tools and materials — are safely stored between modeling sessions.

*Paul Boyer*

thin, and good for general construction. Krazy Glue Blue top is slow setting (60 seconds), thin, and formulated for use on porous materials. Other brands (see the box on page 41) include similar

products with varying setting times and viscosities.

While the engines and rotodome from the Revell kit are correct, the basic airframe is a 707-120, the first air-

liner version of the famous Boeing jet. The E-3A, however, is based on the 707-320 series, with a longer fuselage and different wings. The Airfix kit represents a 707-420, similar to the 707-320, so it was used for this model.

First, I eliminated the passenger windows in the Airfix fuselage by placing a strip of transparent tape over the window openings from the outside, and filling each window from the inside with a drop of gap-filling super glue, Fig. 6. Since these fillings were thick, I used accelerator to speed up the cure of the super glue. However, care must be used as accelerators can damage painted surfaces. Accelerators are sprayed directly onto the adhesive or individual drops are placed with a toothpick. On large areas, super glue set with accelerator can shrink slightly, but in this case it did not. If necessary, a second application of super glue and accelerator would make up for the shrinkage.

This tape method produces filled windows that only need minor sanding. A few windows had tiny pits caused by bubbles; each was filled with a drop of super glue applied with a toothpick, followed by a light wet sanding. Once dry, super glue can be sanded, carved, scribed, and polished just like plastic.

**Construction.** Solvent-type cements dissolve styrene plastic and weld joints, but take at least 20 minutes to set hard. By applying a solvent cement first, Fig. 7, then using a drop or two of super glue, Fig. 8, a strong joint can be made. In this application super glue acts as a jig to support the part as the solvent dissolves the plastic and sets up.

I experimented by cementing scrap fuselage halves with solvent, then covering the seam with a bead of gap-filling super glue. After it set up, I filed and sanded the seam smooth, the super glue acting as a filler. However, shortly after the fuselage was painted the seam began to sink. Apparently, while



Fig. 7. After the inside of the fuselage was sprayed with accelerator, the fuselage halves were cemented together using liquid solvent cement applied with a ruling pen.



Fig. 8. A bead of gap-filling super glue acts as a filler as well as an adhesive. Any super glue seeping through the seam will be hardened by the accelerator sprayed inside the fuselage. The combination of solvent cement and super glue makes an extremely strong joint.



BRAND NAME	COMPANY	THIN	THICK	SPECIAL	ACCELERATOR	SOLVENT
WONDER BOND	Borden Inc. 180 E. Broad St. Columbus, OH 43215	Elmer's Wonder Bond				
SUCCESS	Bostik, Emhart Corp. P. O. Box 3716 Reading, PA 19605	Instant Success Success II				
SUPER JET	Carl Goldberg Models, Inc. 4732 W. Chicago Ave. Chicago, IL 60651		Super Jet	Super Woody	X-Cel	
KRAZY GLUE	Krazy Glue, Inc. 53 W. 23rd St. New York, NY 10010	White top	Green top	Blue top KG666 Foam Primer	KG665	KG667
DURADIX	Mascot (formerly Maxon) Div. of Grobet File Co. of America, Inc. 750 Washington Ave. Carlstadt, NJ 07072	Duradix				
ZAP	Pacer Technology & Resources, Inc. 1600 Dell Ave. Campbell, CA 95008	Zap CA Plasti Zap CA + +	Zapagap Slo Zap	Z-FP foam primer	Zip Kicker	Z-7 Debonder
PERMABOND	Permabond International Corp. 480 S. Dean St. Englewood, NJ 07631	910 Adhesive	Permabond 200			
HOT STUFF	Satellite City P. O. Box 836 Simi, CA 93062	Hot Stuff	Hot Stuff Super T		Hot Shot	
SUPER GLUE	Super Glue Corp. 184-08 Jamaica Ave. Hollis, NY 11423	Super Glue		Super Glue for wood and leather		Super Glue remover
				Drop-Matic Non-clogging Glue Pen		

the super glue was setting up from the outside, some of it was seeping into the joint, causing the external skin to sink.

On my next try, I sprayed the inside of the fuselage with accelerator, then cemented the halves together with solvent cement. The accelerator remains active for up to eight hours. This time,

the accelerator inside reacted with the super glue as it seeped into the joint, hardening it instantly from the inside out. This procedure worked perfectly with no seam shrinkage, so I used it in the E-3 project.

The peculiar construction of the Airfix 707 wings creates a  $\frac{1}{32}$ " gap in front

of the flaps and ailerons on top of the wing, and another gap just behind the leading edge on the bottom. I used gap-filling super glue to fill them, Fig. 9. Since these gaps were deep (they open into the hollow wings), they needed more than one application to fill. Rather than pour in super glue and fill



Fig. 9. Gap-filling super glue fills in the seams on the wings. Accelerator prevents the glue from seeping into the hollow wing.



Fig. 10. A bead of gap-filling super glue was used to build up the incompletely molded trailing edge of the rudder.





Fig. 11. The extended wing tips were built up with Ultra Filler No. 14, attached with super glue, and shaped with a file.



Fig. 12. The pylon outline was corrected by adding a piece of styrene. Gap-filling super glue was used to fill the gaps.

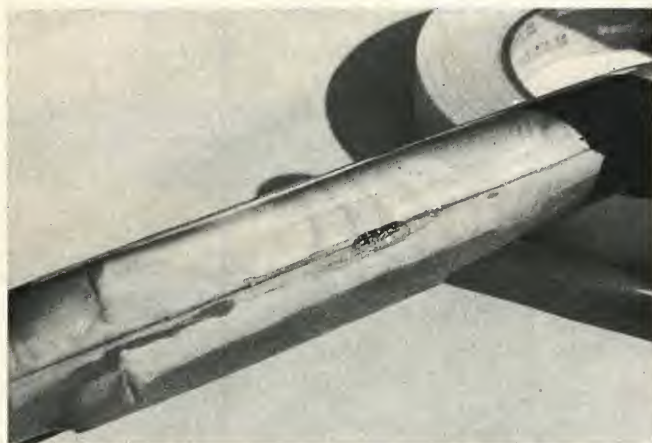
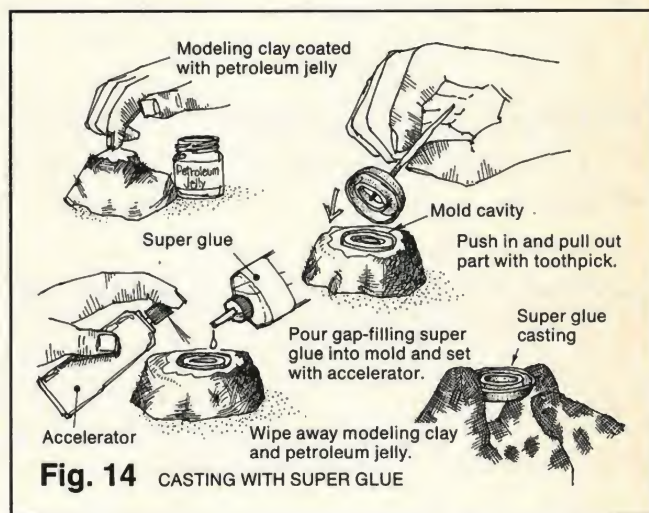


Fig. 13. A generous application of super glue was used to fill the stand slot in the fuselage belly.



the inside of the wing, I stopped the first application's travel with accelerator. The second application brought the filler level with the surrounding area.

I also used gap-filling super glue to fill in the incompletely molded trailing edge of the rudder, Fig. 10.

Super glue is also handy for bonding filler putty to styrene. I formed the extended wing tips for the E-3 by mixing a batch of Ultra Filler No. 14\* on a

\*Model Car Masterpieces, 1525 West MacArthur Boulevard, Costa Mesa, CA 92626.

piece of paper, then stuck the wing tip into the blob of putty while it hardened. When it had set up, I broke it away, then cemented it back onto the wing tip with super glue. Within a minute, I could carve and file the putty to form the new tip shape, Fig. 11. De-

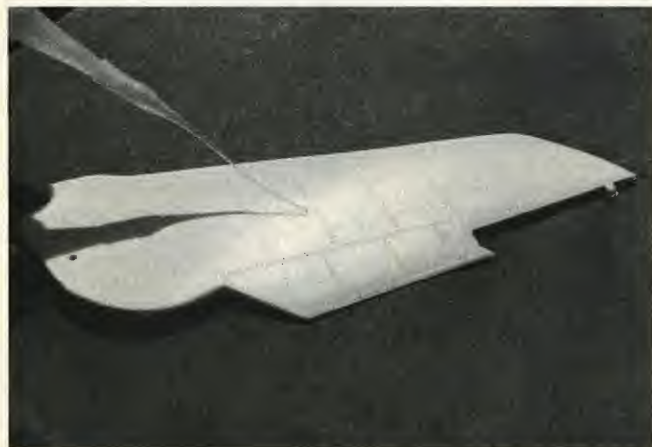


Fig. 15. Using the dispenser tip, the scribed marking lines on Revell's X-5 were filled with super glue and sanded smooth.



Fig. 16. Now the wing has a realistic finish. Note recessed rivets remain but the recessed marking lines are gone.



spite all the stress placed on the glued joint, it never broke or cracked.

The Revell kit features the turbofan nacelles used by the E-3, but the leading edges of the pylons curve down too much. To correct them, I cemented small pieces of plastic dowel across the curves to form new leading edges, Fig. 12. The  $\frac{1}{32}$ " gap between the dowel and the pylon was filled with two applications of gap-filling super glue and sanded smooth. The largest opening I have filled with gap-filling super glue is  $\frac{3}{8}$ " by  $\frac{1}{4}$ ". Since subsequent applications of super glue don't dissolve previous layers, relatively large openings can be filled in a couple of minutes, Fig. 13.

After super glue has been sanded smooth it can be polished to a high gloss with silver cream, metal polish, plastic polish, or rubbing compound. If used as a filler, it should be primed prior to finishing.

Super glue is perfect to fill the hollow prop blades and landing gear strut halves commonly found in vacuum-formed kits. Just fill them with gap-filling super glue, remove them from the backing sheet, and sand the edges as usual. For added rigidity on larger models, place a pin or wire in the part before filling it with super glue.

**Casting parts with super glue.** Super glue can be used to cast small parts in modeling clay molds. This is especially valuable for duplicating pieces for conversions or scratchbuilt models. The part will be flat on one side, so two opposite halves must be made for round objects. To make a mold, simply coat a block of modeling clay with petroleum jelly, then press the original (pattern) into the block, Fig. 14. Place the original on a pin or toothpick so it can be easily removed. Be careful to gently push straight down and pull straight up to avoid distorting the mold cavity.

To make the casting, fill the cavity in the clay with gap-filling super glue, then spray with accelerator to harden the glue, Fig. 14. Remove the casting by peeling the clay away, remove the petroleum jelly by wiping with denatured alcohol, then rinse in warm, soapy water. If two halves are required, repeat the process with the opposite half, and cement the parts together.

**Filling engraved lines.** Many early plastic models were produced with the markings engraved on the parts. Some were raised, and can easily be removed by sanding, but removing recessed lines is difficult. For example, Revell's Bell X-5 (No. 8619) is a beautiful kit, but marred with recessed markings.

To fill the markings I used a needle-pointed dispenser tip and simply traced the recessed design with a trail of thin super glue, Fig. 15. These small dispenser tips come with many brands of super glue or are available separately.

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Fig. 17. (Left) The original wing had flap hinge lines that were too deeply recessed. (Right) This wing has had the flap hinge line filled with super glue, sanded smooth, and rescribed with a stylus.



Fig. 18. This rubber tire on a Williams Brothers 1/72 scale Martin B-10 had split.



Fig. 19. Super glue formulated for porous surfaces was used to repair the split. A light sanding with fine-grit sandpaper made the joint invisible.

I placed the super glue exactly on the design I wanted to remove, keeping it out of the recessed rivets I wanted to retain. When the super glue had hardened, it was a simple job to wet sand the area flush and polish the surface prior to painting, Fig. 16.

This process can also be used to reduce or eliminate out-of-scale engraved panel lines, Fig. 17. After polishing the surface, finer panel lines can be added with a fine-pointed scribe.

Super glue can be used to repair rubber or neoprene plastic, such as that found in Williams Brothers aircraft kit tires. Using super glue formulated for porous materials, I repaired a split tire right on the wheel of a finished model, Fig. 18. I applied the cement directly to the split and squeezed the tire together

for about a minute while it set up. The bond was good and tight, but the joint was visible because the cement was shiny. A few swipes with 600-grit sandpaper removed the shine and the joint became invisible, Fig. 19.

Some cyanoacrylates dissolve expanded plastic foams used in scratch-built models and diorama groundwork. Foam primers are available that can be sprayed on to create a hard crust barrier between the foam and the super glue. Each piece of crusted foam can then be bonded with super glue.

As super glues become more widely used, modelers will discover even more uses for them. If you haven't tried them yet, you should. I think once you get used to them you won't be able to do without them.

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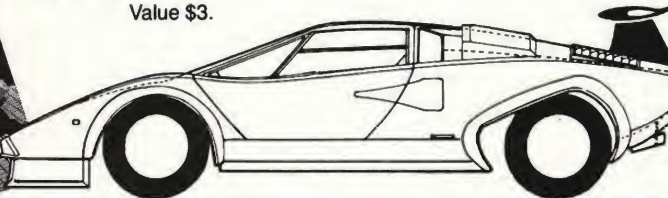
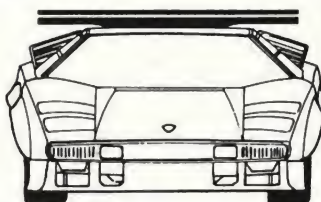
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## 22ND VIRGINIA BATTALION CONFEDERATE STATES OF AMERICA CIVIL WAR, 1862

BY R. J. STAFFORD  
ARTWORK BY THE AUTHOR

**I**N MAY 1862 several companies from the 9th Virginia, the 87th Virginia, and the 2nd Virginia Artillery were reorganized into the 22nd Virginia Battalion. The unit's first assignment was in June 1862 to A. P. Hill's Light Division, where it was brigaded with the 40th, 47th, and 57th Virginia.

The 22nd Battalion fought in 42 engagements, including Malvern Hill, Second Manassas (Bull Run), Sharpsburg (Antietam), Fredericksburg, Chancellorsville, Gettysburg, the Wilderness, Cold Harbor, and Petersburg. With Heth's Division on the first day of Gettysburg, the 22nd fought in Pickett's Charge, during which members of the unit reached the wall before being forced back. The 22nd was disbanded in December 1864 and its members were distributed to other units.

The illustration shows three members of the regiment in late 1862 — fairly early in the war when their uniforms were still recognizable. The corporal on the left wears the basic Confederate gray uniform with a bowie knife on his right hip, and a brown leather cartridge box with brown belting has replaced the regulation black box. The circular buckles are also nonregulation. The shirt under the jacket is civilian, and colors and styles of this item varied widely. Early in the war when the men still had shoes they usually wore what they had upon enlistment.

The first sergeant on the right wears a pair of Union trousers. In lieu of gaiters he has tucked the trousers into heavy woolen stockings to protect his skin. His canteen is issue, but the cup is a reworked tin can — the "22" is the regimental insignia; "Zak" is the sergeant's name. He carries a pistol that was probably removed from a Union officer.

The uniform on the private (center) is close to regulation, but he also carries a bowie knife and an extra haversack. The patches were, of course, just that, added to repair torn items. All three men retain their kepis (or forage hats), which feature a brass "22," a bugle (the infantry insignia), and the company letter ("G" and "N" are shown). Hair was worn long but after months in the field was unruly and untrimmed.

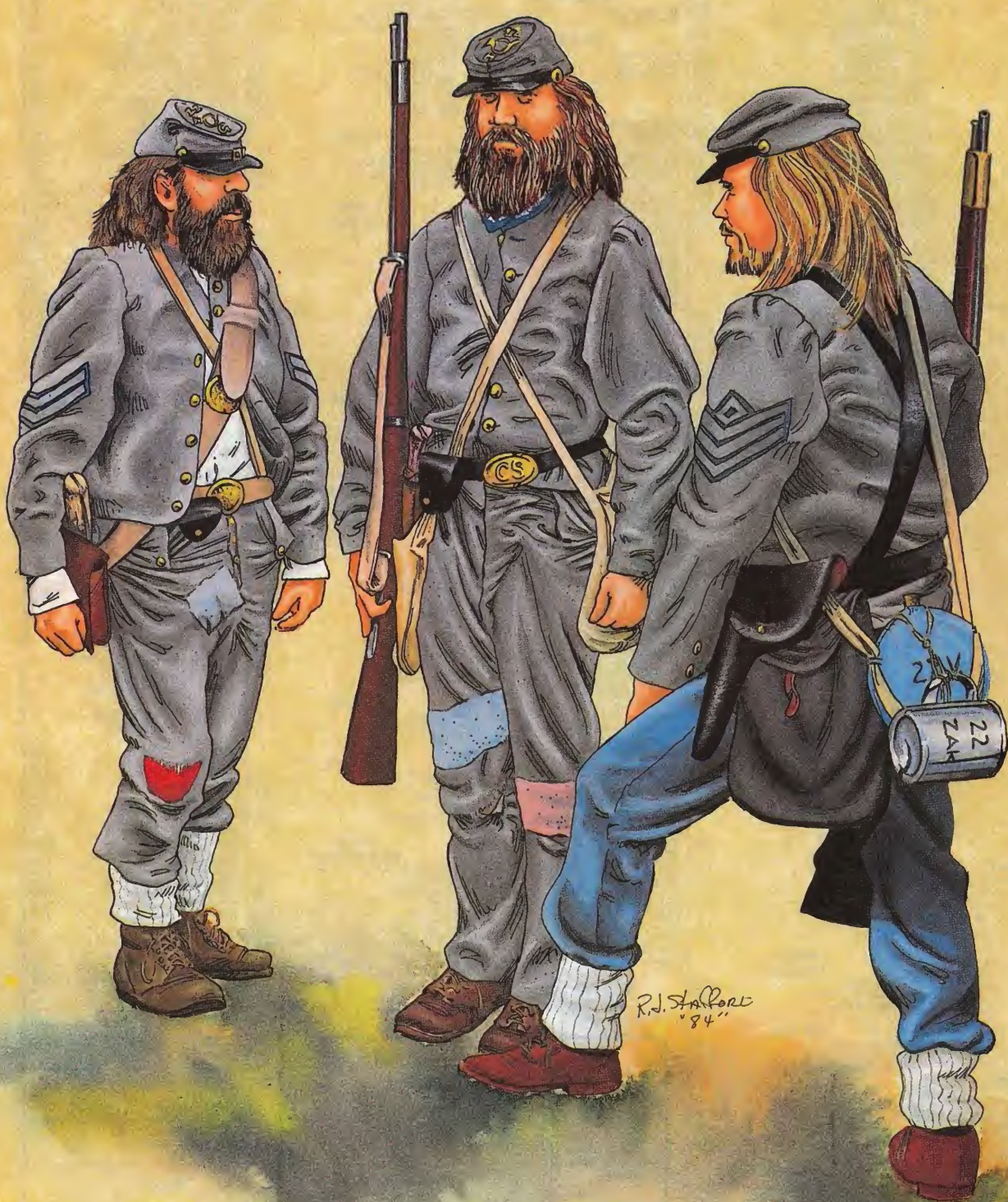
As the war progressed Confederate uniforms became more haphazard — in fact, they ceased to be uniforms at all — and many photos show men who appear as ragged as hobos.

**FSM**

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- Records of Private John Gardner, Company G, 22nd Virginia Battalion. Special thanks to 1st Sgt. John Zak, Company G, 22nd Virginia Battalion, a living history reenactment unit.









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A 1941 photo of a *kleiner Befehlspanzer I*, or small armored command vehicle, built on the chassis of a PzKpfw I Ausf B. A fixed superstructure replaced the revolving turret of the tank, and the lack of main armament left space for radio equipment and a map table.

# German armor terms and abbreviations

## What's an "SdKfz," anyway?

BY BRUCE CULVER

**B**OOKS AND ARTICLES on World War Two German military vehicles often employ complicated German words — and mysterious abbreviations — as nomenclature for armored vehicles, weapons, and equipment. In this glossary I'll explain some of the more commonly used designations related to German armor and weapons. By understanding these technical terms and their abbreviations you'll know the functions and relationships of the various weapons and equipment. Abbreviations are listed in parentheses after the term.

**Abteilung (Abt):** a detachment or group; in German armored units, an Abteilung was usually half of a regiment and was considered the equivalent of a battalion.

**Alte:** old; this term was used to designate an older version of a weapon or vehicle which existed in both old and new (or redesigned) forms, when there was no model designation to denote such differences.

**Aufklärung (Aufkl):** reconnaissance; *Aufklärungs Abteilung* was a reconnaissance battalion; *Aufklärer*, a reconnaissance vehicle; *Aufklärungspanzer*, an armored reconnaissance vehicle.

**Ausführung (Ausf):** model or type; used to denote different versions or modifications of a basic vehicle design.

**Befehlswagen (BefWg):** command vehicle; usually a converted tank or specially built command vehicle with extra radio equipment for command-level communications. Also often called *Befehlspanzer* if built on a tank chassis or converted from a tank.

**Bergepanzer:** armored recovery vehicle; usually a converted tank or a specially designed vehicle built on a tank

chassis. They were usually fitted with winches and towing equipment.

**centimeter (cm):** the unit of measurement used to denote bore sizes of all German weapons 2 cm (20 mm) and larger. The only exception was the Mauser MG151 aircraft cannon, which was originally built as a 15 mm weapon.

**Drilling:** triple; usually referred to the triple mount of MG151 guns in the SdKfz 251/21 *FlaK SPW*.

**Einheits (E, Einh):** universal, standardized; used to identify vehicles designed to a standard mechanical specification. This type of vehicle was best typified by the various (standardized) Einheits 4 x 4 cars and light trucks designed in the 1930s.

**Fahrerblende:** driver's visor; usually a fixed device. *Fahrerseklappe* denoted a movable visor that could be opened, such as those on armored cars and armored half-tracks.

**Fahrgestell (Fgst):** chassis; identified the chassis used to mount a self-propelled gun or howitzer. This designation was necessary because several different chassis designs often carried the same type of weapon.

**Feldhaubitze (FH):** field howitzer; this denoted a tower howitzer (a high-angle-of-fire artillery piece).

**Feldkanone (FK):** field gun; this denoted a towed gun (a long-range, low-angle-of-fire artillery piece).

**Flakpanzer (Flakpz):** armored anti-aircraft vehicle; generally built on a light tank chassis, though heavier models used the PzKpfw IV medium tank chassis.

**Flammpanzer (Fl):** a model suffix used to denote flame-thrower tanks, for example, *PzKpfw III (Fl)*.

**Fliegerabwehrkanone (FlaK):** anti-aircraft gun; used to denote anti-aircraft guns 2 cm or more in bore diameter.



*FlaMG* denoted anti-aircraft weapons smaller than 2 cm.

**Funk (Fu):** radio; used as a prefix in the model designations of German radio sets.

**Funksprechgerät (FuSprG):** radio telephone; used to identify short-range sets used for small unit communications, such as the *FuSprG* "F" used in the SdKfz 251 half-track.

**gepanzert (gеп):** armored; used to identify armored infantry carriers, since early in the war most German motorized infantry rode in trucks.



This *gеп MTW* is an SdKfz 251/1 Ausf A.

**gepanzelter Mannschaftstransportwagen (gеп MTW):** armored personnel carrier (APC); this was the original designation for the SdKfz 251.

**Geschützswagen (GW):** self-propelled gun carriage; this usually referred to types based on a fully tracked tank chassis with a lightly armored, open-topped superstructure.

**Granate (Gr):** shell, projectile; used in designations of various types of artillery ammunition, mostly explosive-filled shells.

**Halbkettenfahrzeug (HK):** half-track vehicle; used by some manufacturers in their model designations, and for experimental types.

**Hanglafette:** hanging gun mounting; a gimbal mounting (*Hanglafette 38*) developed for late-war reconnaissance vehicles. It did away with the heavy pedestal mount used on the SdKfz 222 armored car, allowing the mount to be used on several types of vehicles.

**Infanteriegeschütz (IG):** infantry gun; used to denote infantry support guns and howitzers.

**Jagdpanzer (JgDPz, JgPz):** tank destroyer (literally, "hunting tank"); used to denote the well-armored, closed-top, self-propelled antitank weapons used late in WWII, such as the JgPz IV and the JgPz38(t) "Hetzer."

**Kampfwagenkanone (KwK):** tank cannon; this type of weapon used a vertically sliding breech block, and had the recuperator (recoil) cylinders mounted on each side of the barrel. The breech design allowed faster loading, and the placement of the recuperator cylinders allowed mounting the gun in the standard wide tank gun mantlets.

**Ketten:** tracks; of a tank or other fully tracked or half-track vehicle.

**Kleiner (KI):** small; used to designate a small item of equipment similar to larger models.

**Kraftfahrzeug (Kfz):** motor vehicle; used to designate vehicles that were essentially civilian designs, such as trucks, automobiles, and civilian pattern tractors.

**Kubelwagen:** literally, "bucket car"; used to describe various open-body military passenger cars, many of which had bucket seats for the crew. This term has come to be associated with the Volkswagen typ 82 light military passenger car.



The familiar Volkswagen typ 82 *Kubelwagen*.

**Lafette (Laf):** gun carriage; usually referred to the carriage of a towed artillery piece.

**Lastkraftwagen (LKW, Lkw):** truck; generally denoting a medium or heavy cargo truck, such as the Opel "Blitz" 3-ton series.

**Lauf (L):** length; of the barrel of a gun or howitzer, expressed as a multiple of the bore diameter. L/24 denotes a howitzer with a barrel length 24 times the bore diameter.

**leichte (le):** light; used to denote a light (or small) vehicle similar to larger or heavier designs. The SdKfz 250 was the "leSPW" (light armored personnel carrier).

**Marder:** literally, "marten" — an animal in the weasel family; this name was given to several self-propelled mounts for the 7.5 cm PaK 40 antitank gun.

**Maschinengewehr (MG):** machine gun; used to designate fully automatic weapons of less than 2 cm (20 mm) bore diameter. The 2 cm Oerlikon MGFF and Mauser MG151 were the exceptions; the MG151 was first issued as a 15 mm weapon, resulting in the MG name.

**Maschinenkanone (MK):** automatic cannon; used to denote automatic weapons with a bore diameter of 2 cm or more. Most of the MK weapons were belt-fed aircraft guns.

**Maultier:** literally, "mule"; the name given to the half-track conversions of several 3-ton and 4½-ton cargo trucks for service in Russia and other difficult terrain.

**millimeter (mm):** the unit of measurement used to denote bore diameters of less than 2 cm (20 mm).

**mittlerer (m):** medium; used to designate a medium size vehicle which was similar to larger and smaller types in a series, such as artillery tractors and military cars.

**neuer Arte (nA):** new model; used to denote a new design or revision of a vehicle for which no new official designation or model number was issued, such as the post-1943 version of the SdKfz 250 *leSPW*.

**Ostketten:** literally, "East tracks"; special wide tracks developed for the PzKpfw III and IV tanks for use in Russia during winter and spring. These tracks had long, flat extensions on the outer edges to reduce ground pressure in mud and snow.

**Panzer Abteilung (PzAbt):** tank battalion; generally consisting of an HQ company and four tank companies.

**Panzerabwehrkanone (PAK, PaK):** antitank gun; ballistically similar to the related tank gun (KwK). PaK weapons, like most field artillery, had horizontal sliding breech blocks to protect the breech from debris, and carried the recuperator cylinders below the barrels.

**Panzerbefehlswagen (PzBfWg):** armored command vehicle; a tank converted for use by armored unit commanders; sometimes called *Befehlspanzer*.

**Panzergranate (PzGr):** armor-piercing projectile; this term referred both to the explosive-filled AP round and the tungsten-core solid shot.





A *Panzerjäger I Ausf B*, this one with a 4.7 cm Czech antitank gun on a *PzKpfw I* chassis.

**Panzerjäger (PzJag):** tank destroyer; referred to lightly armored, open-topped, self-propelled antitank guns mounted on various converted tank chassis. The "Marder" vehicles were *Panzerjäger* designs.

**Panzerkampfwagen (PzKpww):** tank (literally, "armored battle vehicle"); used as a prefix in all German tank model designations: *PzKpfw I*, *II*, *III*, *IV*, etc.



A *Panzerselbstfahrlafette (PzSfl)* with a 15 cm *sFH*.

**Panzerselbstfahrlafette (PzSfl):** armored self-propelled artillery mounting. This term included both the *Panzerjäger* antitank mounts and self-propelled field artillery mountings.

**Panzerspähwagen (PzSpWg):** armored scout car; referred to wheeled armored cars, such as the 4 x 4 and 8 x 8 types, and the *SdKfz 250/9* armored half-track reconnaissance vehicle.

**Panzerwerfer (PzW):** armored rocket launcher; mounted on the Opel armored "Maultier" half-track and the *sWS* armored half-track.

**Patrone (Patr):** round (of ammunition); used as part of the designation of various types of artillery and small arms ammunition.

**Personenkraftwagen (PKW, Pkw):** personnel carrier; referred to passenger cars, and the *Einheits* (standardized) military personnel and command cars. *E Pkw* referred to the *Einheits* vehicles specifically.



An *SdKfz 251/7 Ausf C Pionierpanzerwagen*.

**Pionierpanzerwagen (PiPzWg):** armored pioneer (engineer) vehicle; the most common examples were the *SdKfz 251/5* and *251/7* half-tracks.

**Raketepanzerbüchse (RPzB):** antitank rocket launcher; a portable rocket launcher tube based on the design of the U. S. bazooka. The German designs had an 8.8 cm bore, and provided the basic design for the postwar U. S. 3.5" rocket launcher.



A *Raupenschlepper Ost* towing a 5 cm *PaK 38*.

**Raupenschlepper Ost (RSO):** literally, "Eastern front tracked tractor"; a fully tracked cargo truck designed for use by infantry units in snow or mud, originally intended primarily for the Russian front, but also used in the West.

**Saukopf, Saukopfbende:** boar's head mantlet; a late-war cast gun mantlet, smaller than the standard tank gun mounts, but offering thicker armor and better protection.

**schmal:** small; referred to the experimental turret developed for the Panther II. *Schmal* denoted the smaller size of the front armor plate of the turret; the interior volume was the same as the standard turret.

**Schürzen:** skirts; the armored plates fitted to hulls and turrets on many later tanks and assault guns to protect them from antitank rocket (bazooka) projectiles.

**Schützenpanzerwagen (SPW):** armored infantry carrier; armored personnel carrier, APC. The most common SPW was the *SdKfz 251*.

**schwere (s):** heavy; used to denote heavy or large weapons or vehicles similar to others which were lighter or smaller, but of the same general type of class, such as guns, howitzers, and artillery tractors.

**schwere Feldhaubitze (sFH):** heavy field howitzer.



**schwere Feldkanone (sFK):** heavy field gun; usually towed.

**schwere Wehrmachtschlepper (sWS):** heavy military tractor; intended to replace the 5-ton SdKfz 6 artillery tractor. Versions were built to carry cargo, and specially armored models carried the 3.7 cm FlaK 43 antiaircraft gun or the 15 cm Panzerwerfer 42 rocket launcher. The latter had an enclosed, armored body to mount the launcher, while the former had only an armored cab.

**Schwimmwagen:** literally, "swimming car"; the amphibious Volkswagen typ 166, which featured a steel, tub-shaped body, propeller for water, and full four-wheel drive.

**Selbstfahrlafette (Sfl):** self-propelled gun carriage; without the *Panzer* prefix, this usually referred to the antitank and antiaircraft guns mounted on artillery tractors.

**Sockellafette:** pedestal mounting; most commonly referred to the triple pedestal mount for the MG151 aircraft cannon. Used in the SdKfz 251/21 half-track, these gun mounts were also widely used as ground mounts and on railroad trains.

**Sonder Anhänger (SdAnh):** special-purpose trailer; usually referred to trailers used to tow light and medium flak guns, or to carry ammunition, fuel, or supplies.

**Sonderkraftfahrzeug (SdKfz):** special purpose vehicle; denoted those vehicles designed and built for tactical military uses. These types included artillery tractors, tanks, self-propelled weapons, SPWs, and armored cars.

**Sprenggranate (SprGr):** high-explosive shell; for field artillery.

**Stab:** staff, headquarters staff; *Stabskompanie* was the HQ company in a regiment or division.

**Stielgranate:** a hollow-charge antitank grenade developed to improve the effectiveness of obsolete antitank guns. The finned projectile was placed over the muzzle of the gun (typically the 3.7 cm PAK 36), and fired with a propellant charge.

**Sturmgeschütz (StuG):** assault gun; a heavily armored, turretless vehicle mounting a 7.5 cm gun or howitzer. Originally intended as support artillery, the StuG became an effective antitank weapon, being fitted with more and more powerful guns as the war progressed.

**Sturmhaubitze (StuH):** assault howitzer; a heavily armored support vehicle, mounting a 10.5 cm howitzer for use against enemy strongpoints or fortified positions.

**Sturmkanone (StuK):** assault cannon; developed from the related tank gun (KwK), this gun had the vertical sliding breech block of the KwK, but the recuperator cylinders were mounted side by side over the barrel. This resulted in a more compact mounting more suitable for the cramped design of a StuG.

**Sturmpanzer (StuPz):** armored assault vehicle; specifically the StuPz "Brummbär" (Grizzly Bear) built on the

PzKpfw IV chassis, and the "Sturmtiger," an assault rocket launcher built on the late Tiger I chassis.

**Turm:** turret; of a tank or armored car.

**Versuchs (V):** experimental; used to denote prototypes during vehicle development. Also used for aircraft prototypes.

**Vierling:** quadruple; referred to the multiple mounting of four 2 cm FlaK 38 guns on a single carriage (*Flakvierling 38*).

**Waffenamt:** the ordnance department; responsible for development of new weapons, and procurement after development was completed.

**Waffenträger:** weapons carrier; referred to the late-war self-propelled vehicles which carried weapons which could be dismounted from the vehicle. The vehicle itself then served as an ammunition carrier.

**Werfer (W, Werf):** projector or launcher; referred to mortars and rocket launchers.

**Werkstatt Kompanie:** workshop company; a repair and maintenance company in a tank regiment or battalion.



A *Wurfrahmen* on an SdKfz 251/1 Ausf C.

**Wurfrahmen:** rocket launcher rack or frame; used as field launchers, or mounted on various tactical vehicles, most often the SdKfz 251 mSPW.

**zbV:** for special purposes; used to designate a military unit formed for a specific purpose, or to take part in a specific campaign. *PzAbt zbV 40* was formed for the invasion of Scandinavia in 1940.

**Zielfernrohr:** telescopic sight; this referred not only to sniper's rifle sights, but also to telescopic and optical sights in tanks and on many field guns, especially antitank guns.

**Zugkraftwagen (ZgKw):** prime mover (artillery towing vehicle); usually denoted the various half-track tractors designed to tow most classes of field artillery.

**Zwilling:** twin, double; denoted a twin gun mount such as the *Flakzwilling 43*, or the MG81Z twin gun mount used in many German aircraft, usually as rear defensive armament.

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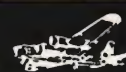




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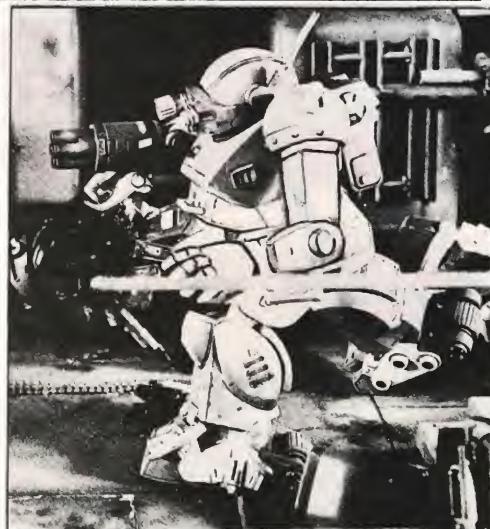
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# Modeling the

BY ROSCOE CREED

**T**HE MYSTERY SHIP has been a favorite of mine since childhood. There's something about its graceful lines, huge radial engine, and wheel pants that always said "Go!" to me.

In 1965 Hawk Model Company introduced a 1/48 scale model of the Travel Air Mystery Ship, the last in its series of classic racing planes begun in the late '40s. The series was reissued in 1976 by Testor in attractive new packaging, appropriately labeled "The Golden Age of Aviation."

Out of the box, the model is relatively easy to build, Fig. 1. The only indication of its age is the molded-in trim

lines which come in handy when masking; the paint demarcation hides them in the finished product.

The model's most outstanding feature is the engine. Cylinders and crankcase, gear case, exhaust collector ring, intake manifold, and pushrods are molded separately, making them easy to prepare and paint, and when assembled they make a beautiful scale model of the Whirlwind, Fig. 2. The Microscale decals even include the tiny Travel Air logos on the vertical fin and the fuselage below the cockpit.

The worst feature of the kit is the absence of interior detail. Only a pilot figure

is included. I measured the model with a Murphey's Rule\* and discovered that the model is about a scale foot short in both wingspan and fuselage length, which would put it closer to 1/50 scale.

**Building a classic.** I began construction by sanding all bonding surfaces on a sheet of 400-grit wet-or-dry sandpaper taped to my workbench, then drilled all holes for the rigging, Fig. 3.

Next, I scratchbuilt a cockpit interior. The real airplane's fuselage was

\*Murphey Model Products, P. O. Box 8181, Cincinnati, OH 45208.

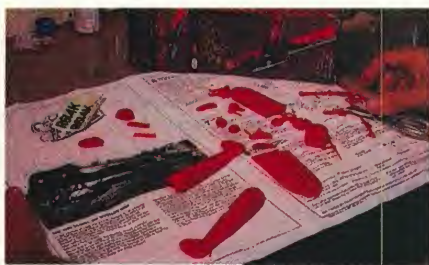


Fig. 1. Kit contains 27 parts plus windscreen, and an excellent instruction sheet. "Golden Age" package was introduced when Testor re-released the kit in 1976.



Fig. 2. Close-up of Wright Whirlwind engine, the most outstanding feature of the kit.



Fig. 3. Holes for rigging were preplanned and drilled before parts were assembled.



The Hawk kit of the Mystery Ship was first marketed in 1965, the last of a series of 1/48 scale racing planes started in the late '40s. It is still an excellent kit even by today's standards.



# Travel Air Mystery ship in 1/48 scale

Extra details and a smooth paint job improve the Testor/Hawk classic

plywood over a steel tube frame, which can be seen through the cockpit opening. I drew an inch-long section of the tubing structure on paper, covered it with waxed paper, and built two frames, pinning pieces of stretched sprue in place much the same way a balsa flying model is built, Fig. 4.

I found a floor and seat in the spares box and filed them to fit. The Mystery Ship was not plush inside, but it did have seat and back cushions. I cut these from sheet styrene and filed grooves in them to simulate tufted upholstery. A control stick was made from a bent pin and the rudder pedals were cut from sheet styrene. I built the control panel using Waldron's 1/48

scale instruments. The interior was painted Pactra camouflage gray (M13), and the seat cushions Testor gloss black (1147), Fig. 5.

After the interior was completed, I cemented the fuselage halves together with Micro Weld. They fit so well that no putty was needed. The same was true for the wing halves, but the wing and stabilizer roots needed a little putty.

I added exhaust stacks cut from drilled-out stretched sprue, and filed the inside of the cowl slightly to fit over them. I also cemented the little braces in place between wing and fuselage, but if I were to build another Mystery Ship I would fit these and cement

them in place last, as they made finishing difficult. The windscreen was attached with white glue and masked to prevent scratching.

I painted the engine cylinders Pactra X-35 Hotrod Primer, gearbox Testor 1138 gloss gray, and the exhaust collector ring non-buffing Spray 'n' Plate. After the paint was dry, I assembled the engine. Next, I painted the wheels and tires and assembled the landing gear. I dry-fitted the engine, cowl, and landing gear to the fuselage, but didn't attach them until the airframe was painted.

Before painting, I sanded the surface of the model with 600-grit sandpaper. Nothing gets rid of sanding residue and



Fig. 4. Frame sections were scratchbuilt from stretched sprue with the same techniques used to build balsa flying models.



Fig. 5. The completed cockpit shows the frame section in place along with the scratchbuilt seat cushions. The seat and floor are from spares box.

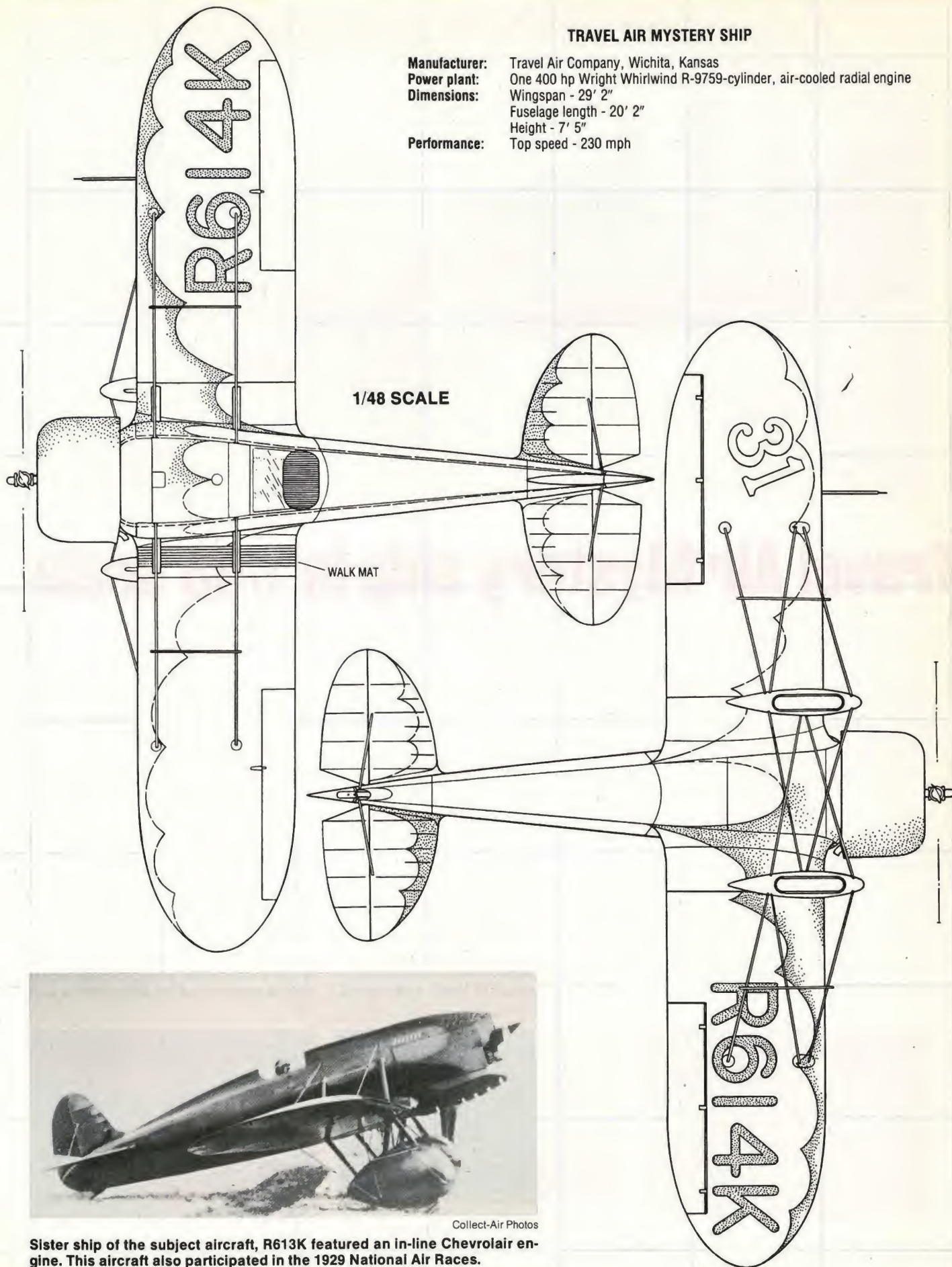


Fig. 6. Thin strips of tape were pared from the outer edges of the circles and bent to fit the molded-in design.



## TRAVEL AIR MYSTERY SHIP

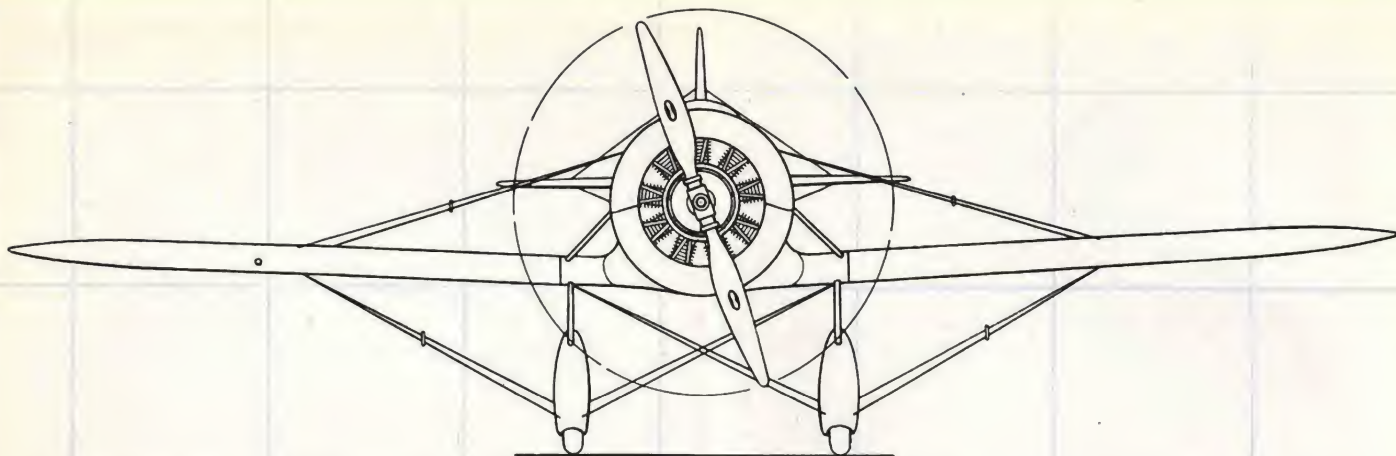
**Manufacturer:** Travel Air Company, Wichita, Kansas  
**Power plant:** One 400 hp Wright Whirlwind R-9759-cylinder, air-cooled radial engine  
**Dimensions:** Wingspan - 29' 2"  
 Fuselage length - 20' 2"  
 Height - 7' 5"  
**Performance:** Top speed - 230 mph



Collect-Air Photos

Sister ship of the subject aircraft, R613K featured an in-line Chevrolair engine. This aircraft also participated in the 1929 National Air Races.

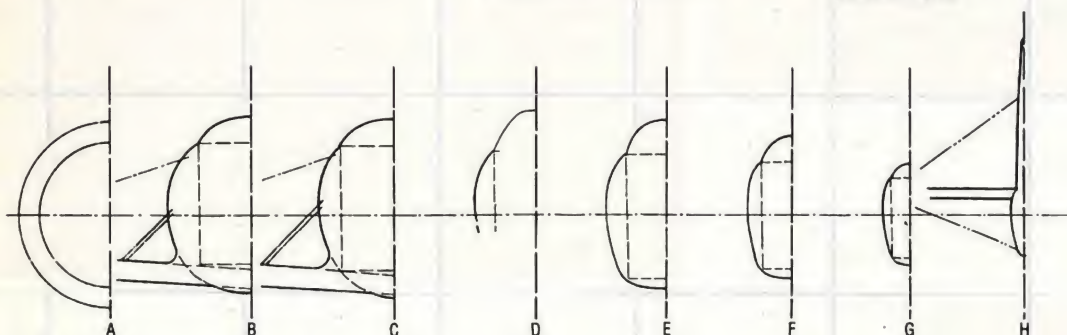




Collect-Air Photos

PREPARED FOR  
**FINESCALE MODELER**  
BY  
**Björn Karlström**

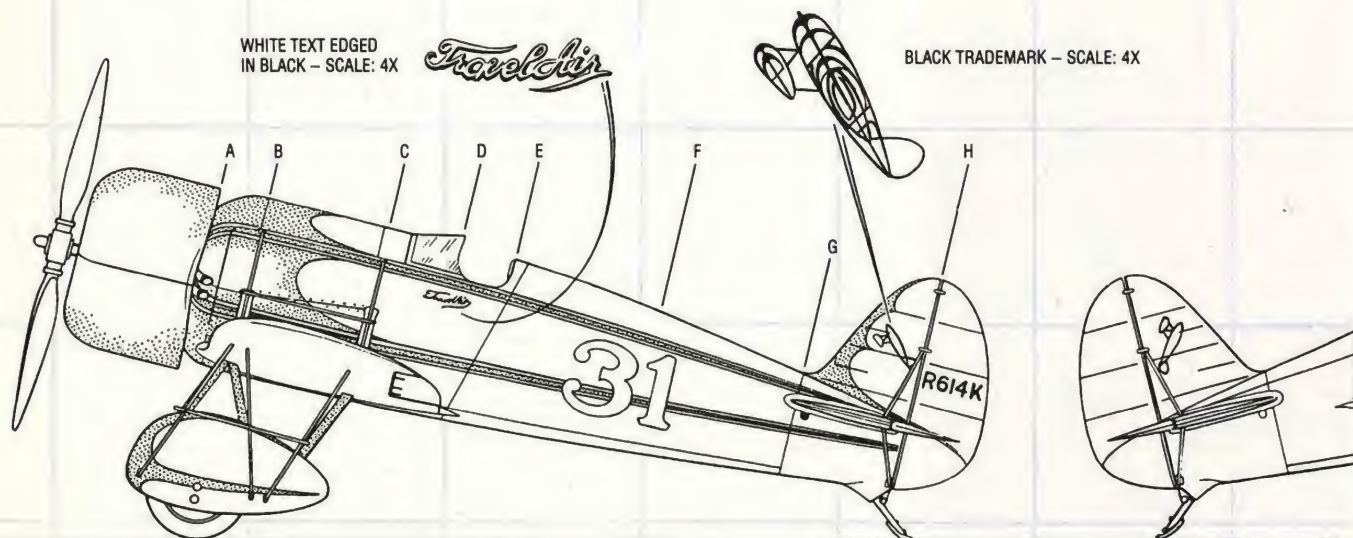
Subject of the model, Travel Air Mystery Ship R614K as it appeared in the 1929 National Air Races in Cleveland. Note that Travel Air aircraft logo on tail seems to be going over the top of a loop.



WHITE TEXT EDGED  
IN BLACK - SCALE: 4X

*Travel Air*

BLACK TRADEMARK - SCALE: 4X







Decals were trimmed to the paint line and applied individually to wings and fuselage.



Fig. 8. The rigging was done with .015" piano wire filed flat and cemented in place with Hot Stuff.

Fig. 7. Masking for batwing design was made by punching circles from tape laid on back of an old rubber dustpan.



dust flecks better than a wash with detergent. After rinsing the model with water, I dried it with the blast of air from an airbrush.

**Painting.** I placed a tissue-wrapped pencil in the engine mounting hole to serve as a handle during painting. The red recommended by Testor is No. 1103, but my research material describes the color of the Mystery Ship as orange trimmed in black. So I compromised by mixing one part 1103 red and one part 1127 orange to produce the desired color. I thinned this about 1:1 with Testor thinner and airbrushed it on a piece of scrap styrene to make sure it would lay down shiny and smooth. I sprayed the first of four light coats on the model and allowed it to dry to the touch.

After each coat was dry, I wet sanded lightly with worn 600-grit paper to remove dust particles imbedded in the



Collect-Air Photos

Famous pilot Frank Hawkes stands next to NR1313 in the second Texaco scheme of red and cream in the early '30s.

## THE MYSTERIOUS MYSTERY SHIPS

The National Air Races were the high point of the aviation year's events in aviation's "golden years"—the 1920s and 1930s. From a small beginning in 1920 they were big business by 1929, thrilling thousands of spectators in Los Angeles.

The races had also become another Army-Navy game. The two services used the event to show off their high-performance pursuit planes, the winner usually being the biplane with the biggest engine. Civilian entries usually came in as also-rans.

In 1929 the nationals were moved to Cleveland for what was to be the biggest event ever—four days of aerobatic demonstrations, dirigible flybys, static display, nightly fireworks, cross-country races, and 35 closed-circuit races, culminating on Labor Day with a 50-mile free-for-all that would pit civilian racers against the military's best.

But that year there was unexpected excitement. Where in previous years competitors and their planes were thoroughly publicized in the press long before race day, in 1929 two Travel Airs had flown in the day before the main event, and were spirited into a hangar and placed under cover. No one was allowed to see them, and Doug Davis, the pilot who would fly them in separate contests, designers Herbert Rawdon and Walter Burnham, and factory owner Walter Beech would not answer questions about them.

The press, frustrated, began referring to the free-for-all entry as the "Mystery Ship," a name that caught on with the public, and eventually was adopted by the Travel Air Company.

The facts, revealed after the nationals, were that work had begun on the two planes—Travel Air Model Rs—just that spring.

paint, then washed and dried the model. After the fourth coat had dried, I rubbed out the finish with a touch of Ultra Brite toothpaste on a piece of old T-shirt. This eliminated the last of the dust particles, killed the new-toy shine, and left a pleasing scale sheen.

Next, I masked the scallop design on wings and tail with thin strips pared from the edges of circles of tape, Fig. 6. I punched the circles from 3M Paper Tape No. 256, a low-tack tape available in art supply stores, using arch punches bought from the Brookstone Company.\* I laid the tape on the back of an old rubber dustpan before punching to protect the edges of the punch and keep the tape sticky, Fig. 7.

The fuselage pattern was masked next, but some design elements were so

\*Brookstone Company, 127 Vose Farm Road, Peterborough, NH 03458.





Collect-Air Photos

Another Mystery Ship was made for Italy and painted in a scheme similar to the Texaco aircraft. Note the red, white, and green fin and rudder.

They were low-wing monoplanes, with wingspans of 29' 2", and fuselages 20' 2" long. One, R613K, was fitted with a six-cylinder Chevrolair inverted in-line engine producing 250 horsepower; the other, R614K, with a Wright Whirlwind R-975 nine-cylinder supercharged radial producing 400 horsepower. Testing of the two planes was completed only ten days before they were flown to Cleveland.

When the Mystery Ships were rolled out on race day their biplane counterparts suddenly looked prehistoric. The Travel Airs' sleek, clean lines caused a sensation, an indication of the classics they would become.

The in-line-engined version, R613K, was entered in the experimental aircraft event, and although the engine went sour, the plane still did well enough to take first place with 113.38 mph.

The best was yet to come. Seven planes, including the radial-engined Mystery Ship, were entered in the free-for-all. When the starting flag dropped, Davis sent the tiny monoplane flashing ahead, easily taking the lead. Then on a turn he cut inside a pylon. He circled to correct his error, and in so doing fell a mile behind the new leader. Propeller screaming, the little ship worked its way past its competitors one by one, at the last moment defeating the Army's Curtiss P-3 Hawk — and posting an official speed of 194.9 mph.

The Travel Air Mystery Ship had more to its credit than just good looks and a racing victory. It achieved other firsts — the first radial-engine land plane to exceed 200 mph; the first to use an NACA (National Advisory Committee for Aeronautics) cowl and wheel pants in racing; and the first civilian aircraft



Collect-Air Photos

The Texaco NR1313 now hangs in Chicago's Museum of Science and Industry.

entry to beat both the Army and Navy entries in the free-for-all.

The defeat left military airmen stroking their chins and looking toward low-wing monoplanes as replacements for the venerable biplanes as first-line pursuit ships. The results surfaced two years later with the introduction of the Boeing P-26, a radial-engine, low-wing monoplane with wheel pants.

As for the Mystery Ships themselves, R-613K was re-engined with a radial and sold to Florence "Pancho" Barnes, a well-known California aviatrix. Later it was sold to Paul Mantz, who flew it in several movies. It is now owned by Pancho Barnes' son, who plans to restore it for static display.

Instead of racing in 1930, the free-for-all winner, R614K, toured the nation for Gulf Oil. It was back at the nationals in 1931 however, with Walter Hunter as pilot. During practice the plane caught fire, and Hunter had to bail out and watch the little racer plunge to destruction.

Three other Mystery Ships were built, one for Shell Oil, one for Texaco, and one for the Italian government, which also saw its possibilities as a pursuit plane.

Shell's plane, wrecked in May 1931, was rebuilt by Jimmy Doolittle in time for the nationals. In a practice speed run at nearly 300 mph the wings broke, and Doolittle, like Hunter, bailed out and watched his plane fall to earth.

Texaco's Mystery Ship was flown by Frank Hawks in demonstrations and record-setting cross-country flights during the early 1930s. It survived several minor crashes, and today hangs fully restored in Chicago's Museum of Science and Industry. The fate of the Italian Mystery Ship is unknown.

tiny they couldn't be masked and painted at the same time as the others. These were covered over to be masked and painted in a second stage. I used the same thinning, painting, sanding, washing, and rubbing techniques for the black as for the red, except that a cotton swab was used to rub around the wing-fuselage braces. I left the tape in place on the red while I rubbed out the black to prevent the color from spreading.

The most frustrating problem I encountered with the model was the length of time required for the paint to dry. The model took over six months to finish; when handled the heat from my hands would soften the paint and many retouchings were needed to remove fingerprints.

**Decaling.** I trimmed and applied each wing and fuselage numeral separately, then washed the excess glue off

after the decals were dry. They laid down beautifully on the shiny surface.

I cemented the landing gear in place with Hot Stuff. Since the struts were spindly, I cut flying wires and rigged the center braces to keep the gear from breaking off, Fig. 8. The other flying wires followed, cut from .015" piano wire ground and filed flat (see "Modeling the Supermarine Walrus," Fall 1982 FINESCALE MODELER).

The tail skid, molded as part of one fuselage half, broke off long ago so I made a new one from a bent pin filed to shape. I installed it with Hot Stuff, then painted it with Pactra flat aluminum (F-11).

Next, I cemented the engine and cowl in place. The polished aluminum propeller was the final touch, coated with buffing Spray 'n' Plate and sealed with Future floor finish. The Hamilton Standard propeller lo-

gos came from my decal spares box.

The finished Mystery Ship model is an attention getter wherever it is displayed, and has won several awards. The most distinguished of these was first place in the racing and civil aviation category, 1/48 scale and larger, at the 1982 IPMS national convention in St. Louis.

FSM

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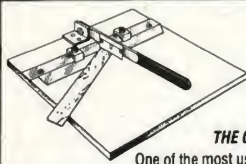
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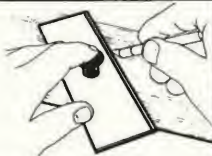
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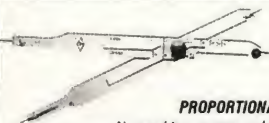
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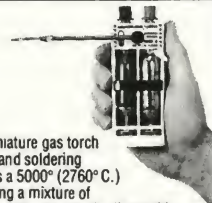
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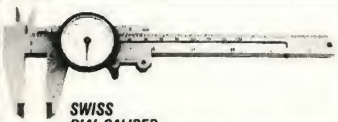
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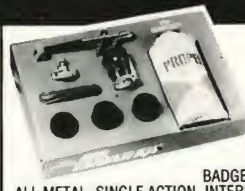
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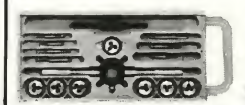


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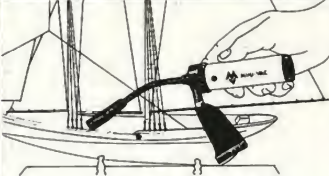
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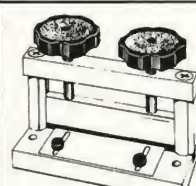
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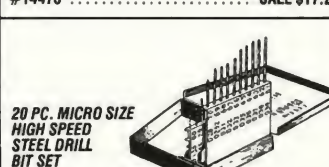
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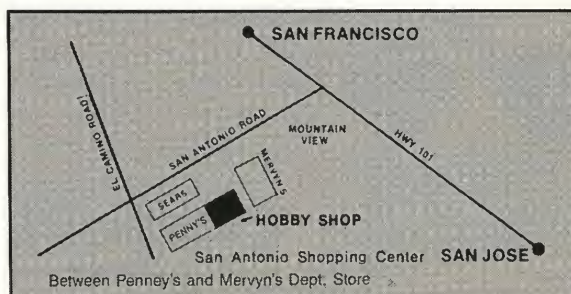
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BY BURR ANGLE



### Close-up Photography

A recent addition to Eastman Kodak's "Workshop Series" of how-to books for intermediate and advanced photographers, this 8½" x 11", 96-page, soft-cover book by William White, Jr., Dennis Brokaw, and Malcolm Furlow contains 123 color and 8 black-and-white photos. Many of the photos show flowers, insects, reptiles, and fish, as well as man-made objects such as computer chips.

Furlow's chapter, "Photographing miniatures," contains much valuable information

on using 35 mm SLRs and 4 x 5 view cameras to photograph scale models. Furlow's pictures show HO trains on model railroad layouts in spectacular western U.S. settings. His imaginative techniques apply equally well to dioramas in any scale.

The authors discuss lighting, lenses, filters, and other technical matters, but repeatedly emphasize that "to get the best results from close-up techniques, you must put as much time, effort, and planning into the placing of the subject as into the functions of the camera and lens system, film, and the lighting arrangements."

The book is published by Eastman Kodak, Rochester, NY 14650; the price is \$8.95.



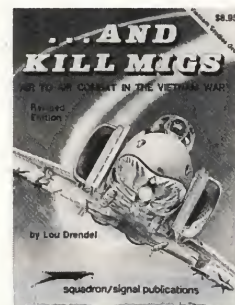
### Cobra

Texas race car driver and sports car dealer Carroll Shelby dreamed of mating a sturdy English sports car with a large American V-8 engine to produce a world-beating vehicle. The Cobras of the early and mid-1960s were the result; these were built by AC Cars Limited and powered by one of

several Ford engines displacing up to 428 cubic inches.

This 256-page, 7½" x 10¼", hard-cover book by British journalist Trevor Legate contains 250 black-and-white and 55 color photos; the text provides a complete history of the series.

It is published in the U.S. by Motorbooks International, P. O. Box 2, 729 Prospect Avenue, Osceola, WI 54020; the price is \$29.95.



### ... And Kill MiGs:

#### Air to Air Combat in the Vietnam War

This 80-page, 8½" x 11", soft-cover book by Lou Drendel is a revision of the author's earlier book with the same title. The current edition contains 158 photos (11 in color) and 24 color paintings of aircraft. There are lists of USAF and USN victories over North Vietnamese fighters and a brief introduction by the author, but most of the text consists of narratives by some 30 Air Force and Navy aviators describing how each destroyed one or more enemy planes between 1965 and 1973.

VOLUME 8 NUMBER 1 OCTOBER 1982

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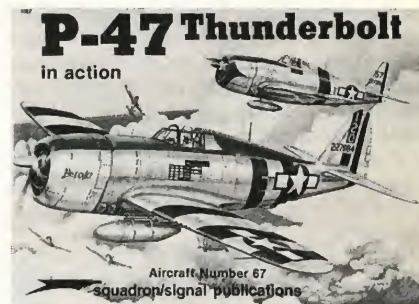
It is published by Squadron/Signal Publications, Inc., 1115 Crowley Drive, Carrollton, TX 75011-5010; the price is \$8.95.

### F-4 Phantom II in Action

Squadron/Signal Publications has also released a new book on the Phantom, supplementing its earlier, out-of-print volume

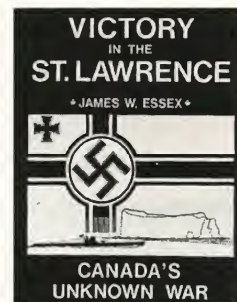


with the same title. This 8 1/4" x 11", 58-page, horizontal-format, soft-cover book by Larry Davis with illustrations by Don Greer contains 103 black-and-white photos, 86 line drawings, and 10 color renderings. All Phantom II variants are covered in the text. The price is \$4.95.



### P-47 Thunderbolt in Action

Another recent work by Larry Davis from Squadron/Signal, this 8 1/4" x 11", 50-page, horizontal-format, soft-cover book contains 93 black-and-white photos, 57 drawings by Kevin Wornkey, and 14 color renderings by Don Greer. All versions of the Republic P-47 are shown and described. The price is \$4.95.



### Victory in the St. Lawrence: Canada's Unknown War

Between May and October 1942, at least 22 Allied vessels were sunk by German submarines in or near the mouth of the St. Lawrence; several other ships were sunk as late as April 16, 1945. James W. Essex was an R. D. F. (Range and Direction Finder, or radar) operator in the Canadian Navy during those years and was stationed at Gaspé, New Brunswick, in 1942.

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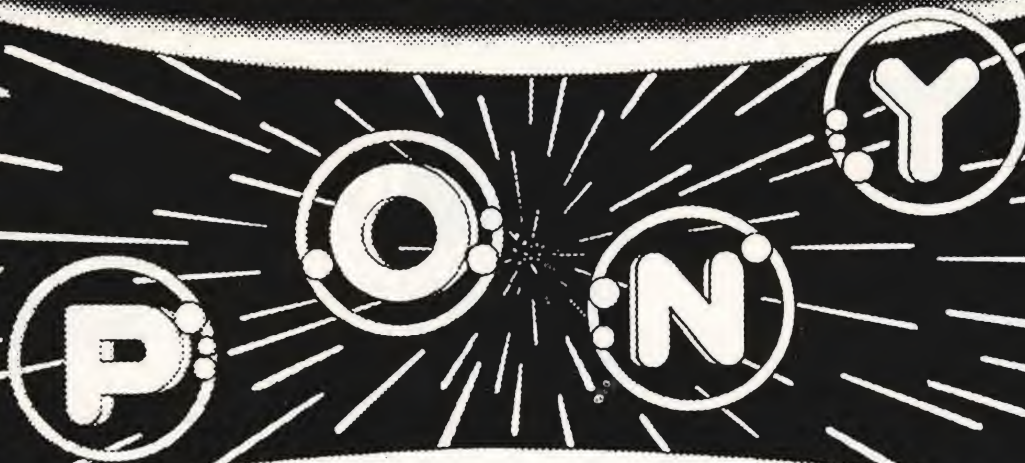
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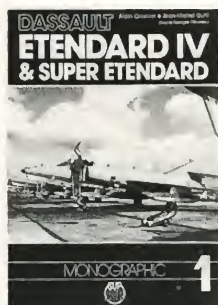
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This 176-page, 8½" x 11", hard-cover book is his account of the growth of Canadian antisubmarine forces from 1939 through 1945, concentrating on the buildup at Gaspé and Halifax. There are 154 black-and-white photos, several maps, and a bibliography.

It is published by The Boston Mills Press, 98 Main Street, Erin, ON, Canada NOB 1T0; the price is \$24.95.



#### Dassault Etendard IV & Super Etendard

Alain Crosnier and Jean-Michel Guhl are the authors of this handsome 8¼" x 11¾", 52-page, soft-cover book on the Dassault Etendard IV and Super Etendard which serve on French aircraft carriers and with the armed forces of Argentina and Iraq. There are 106 photos (16 in color) and 1/72 scale drawings of both aircraft. The text (in French) discusses the development of the planes and their deployment with French, Argentinean, and Iraqi units.

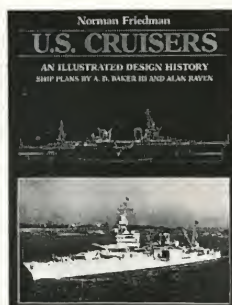
The book is published by Sup Air Publications, 92, rue du Faubourg Poissonnière, 75010 Paris, France. The overseas price for

a single copy is Fr58.00 (roughly \$6.20). Contact the publisher for information on shipping charges and prices for multiple copies.

#### U. S. Cruisers:

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ships, this 480-page, 8½" x 11", hard-cover book contains 200 black-and-white photos (all U. S. Navy) and 224 line drawings. The text, based largely on the author's research in U. S. Navy archives, provides a thorough discussion of the technical, political, and economic influences on the designs of U. S. cruisers from the 1880s to the present. Each class of cruiser is described in detail, including several designs that were never constructed. There are appendices and an index.

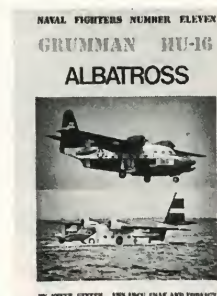
The book is published by Naval Institute Press, Annapolis, MD 21402; the price is \$46.95.

Naval Institute Press also publishes Fried-

man's design histories of U. S. destroyers and aircraft carriers; his study of U. S. battleships is scheduled for publication during 1985.

#### Grumman HU-16 Albatross

A prototype Grumman Albatross twin-engine amphibian first flew on October 1, 1947, and several of the planes are still in



service, including at least one operated by the Smithsonian Institution.

Steve Ginter's 73-page, 8½" x 11", soft-cover study of the Albatross includes extracts from Grumman manuals, reminiscences of flights in the Albatross by several pilots, and 215 photos (25 in color) showing the plane in many color schemes, mostly those of the U. S. Navy, Air Force, and Coast Guard, but also the air forces and navies of such countries as Greece, Spain, Norway, and Mexico.

The book is published by Naval Fighters, 1754 Warfield Circle, Simi Valley, CA 93063; the price is \$14.95.

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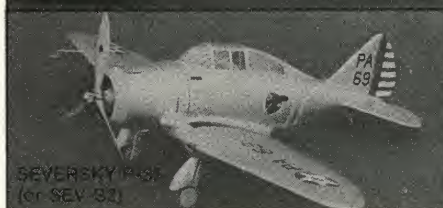
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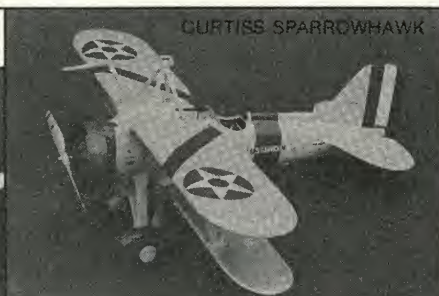
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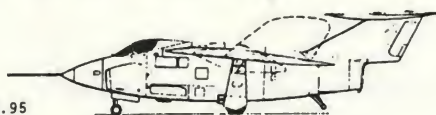
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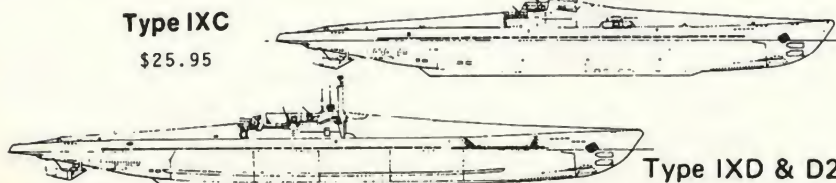
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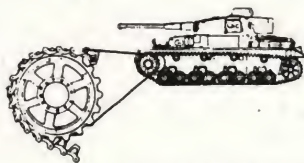
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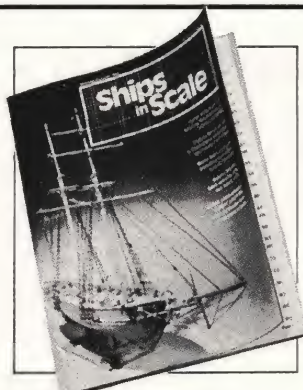
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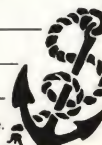
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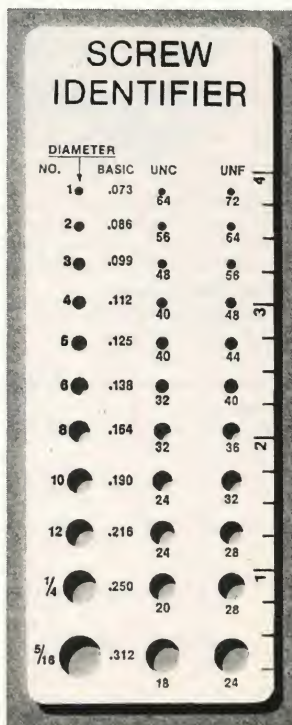
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The tape is available in either VHS or Beta format from Motorbooks International, P. O. Box 2, Rev., 729 Prospect Avenue, Osceola, WI 54020; the price is \$79.95.

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"Pilots' Heaven" is a 42-minute black-and-white training film produced during WWII by Hal Roach Studios for the Army Air Forces. Its purpose was to keep aviation cadets out of pilots' heaven by teaching them to avoid the nine most common causes of training losses — such as taking off without consulting checklists and Form 1, ignoring notices to airmen, and failing to read instruments. All are shown to cause fatal crashes.

The film's production quality is as good as most Hollywood movies of the period; late-night television viewers may recognize several of the actors.

Included on the same cassette is a 52-minute black-and-white documentary, "The Stillwell Road," produced in 1945 by the U. S. Army Signal Corps. The film describes operations throughout the China-Burma-India theater during WWII, but focuses on how U. S., British, Chinese, and other Allied forces, including those led by General Joseph Stillwell, planned and built the Stillwell Road through Japanese-occupied Burma from India to China. (This highway was also called the Burma Road and the Ledo Road.)

The narration by Ronald Reagan is excellent, as is the editing; there are memorable scenes of road building through jungles and over mountains; these are complemented by air and ground combat sequences.

The tape is available in either VHS or Beta from NF Video, 1219 Sunset Plaza Drive, No. 3, Los Angeles, CA 90069; the price is \$59.95.

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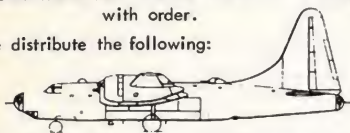
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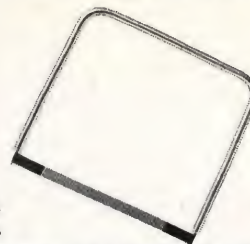
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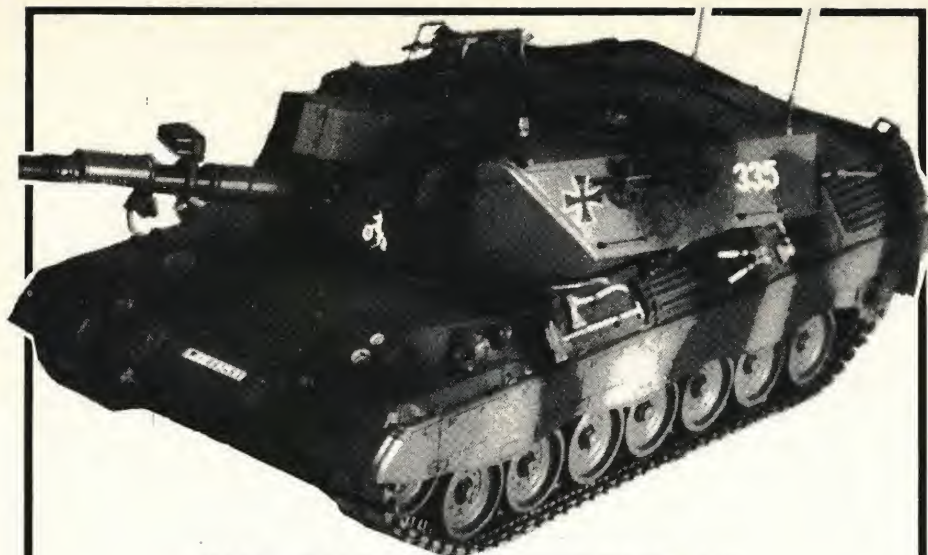
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**More reviews, and more Dora.** I wrote you a letter of praise shortly after I read the first issue of your fine magazine, complimenting you on the professional approach and layout and the quality of articles and photography. Well, you have managed to improve on those first issues to such a degree that I am compelled to subscribe so that I won't miss a single issue.

I have only two suggestions that I hope you will find helpful. First, one of my favorite departments is FSM Workbench Reviews, which I have come to rely on for determining whether or not I purchase a kit. Would it be possible to add two or three more kit reviews per issue? This would be greatly appreciated by me as well as, I suspect, other readers.

My other suggestion concerns FSM Showcase. More photographic coverage of the excellent models would be helpful and informative to your readers. It is not necessary to include a step-by-step construction run-down, but more pictures of different views would really be helpful and entertaining. A case in point is the feature on the impressive Dora by Lewis Pruneau in the January/February issue. There were only two main views of this fantastic model and I found myself longing for closeup views of this masterpiece.

I hope that these suggestions are of some constructive help and make an already excellent publication better. Keep up the good work.

*Jim Tait  
Surrey, B. C., Canada*

Loved your article on the German railway gun Dora, but there are only two pictures, which seems so inadequate for the subject. Is it possible to obtain more photos and information from the author for a subject of such importance? Modeling the gun would be a terrific challenge and of interest for any dedicated serious hobbyist as this area is a little-known aspect of military history and design.

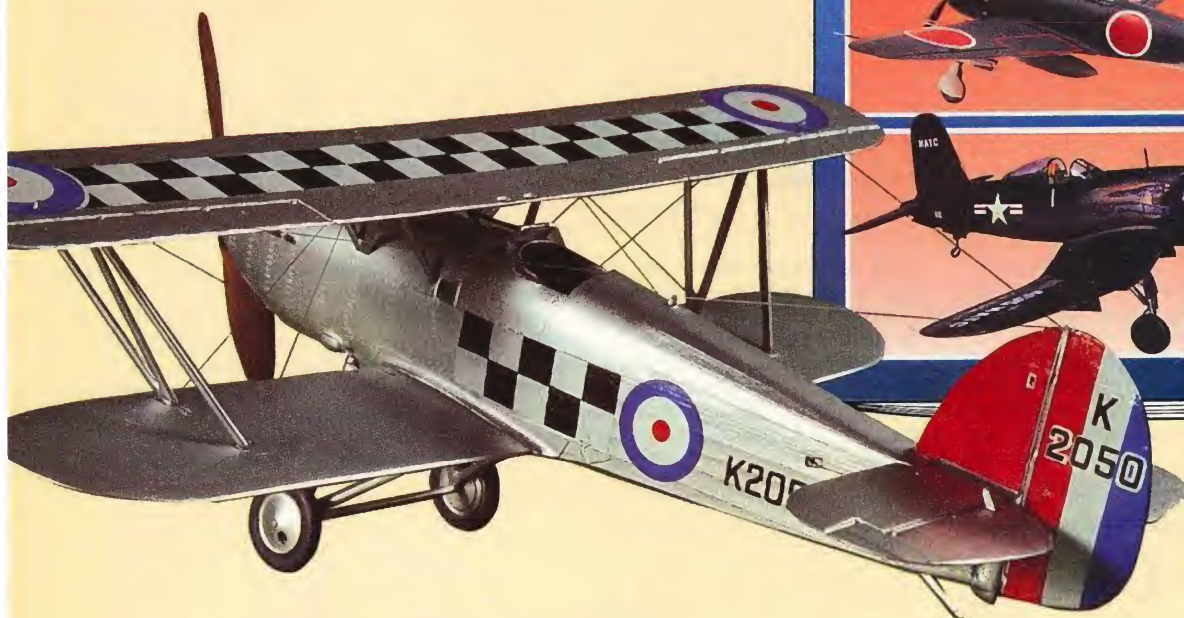
*Paul Rohe  
Martinsville, N. J.*

[We presented everything we had on Dora, and what ran in the magazine was all the information that builder Lewis Pruneau could provide. As so often happens, Lewis had no plans to submit the material to FSM when he built the model, and didn't take step-by-step photos or keep records of his construction techniques. We had to present Dora as a Showcase instead of a how-to feature. But take heart — Lewis has promised to prepare a construction feature on his next railway gun project! Also on the bright side, we're moving heaven and earth to make room for more Workbench Reviews in future issues. — Bob Hayden.]

**FSM**



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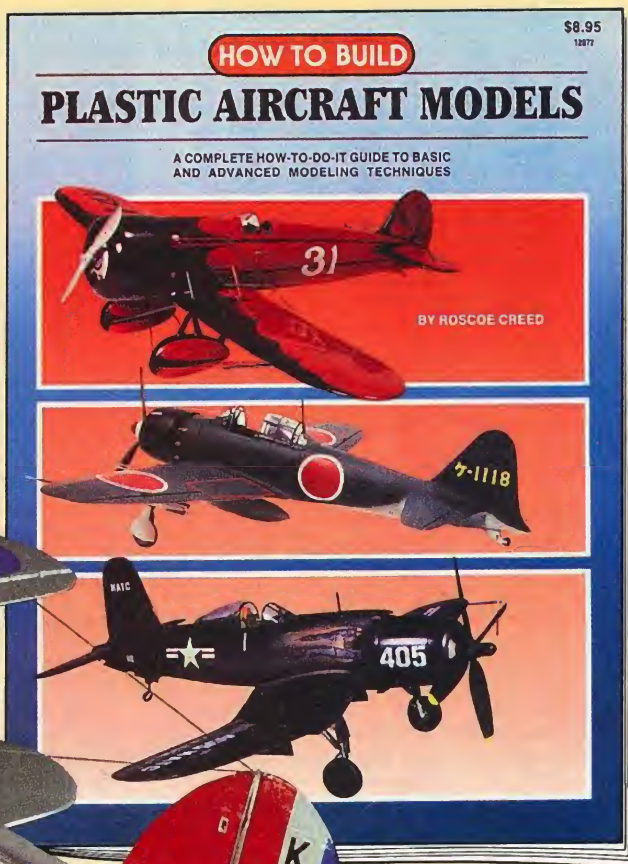


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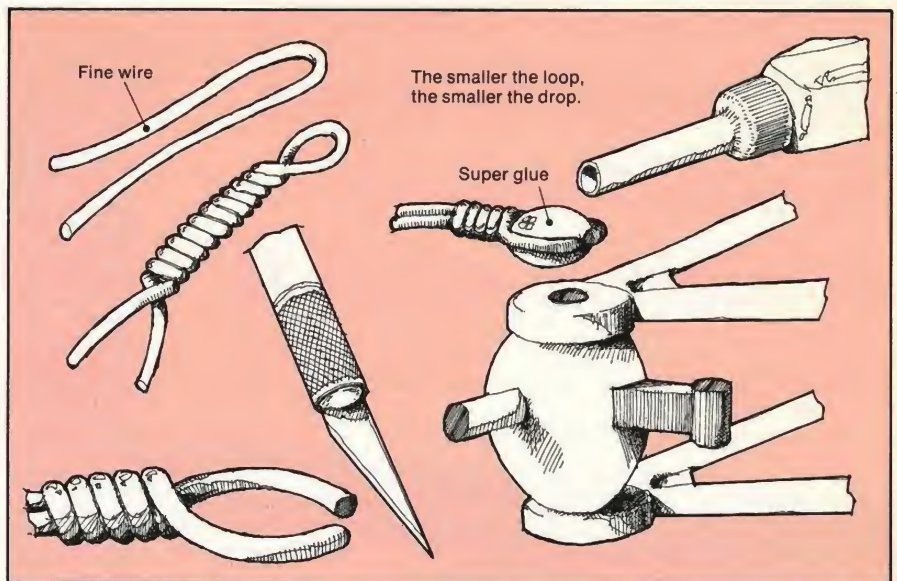


Would you like to share information on a useful tool or technique with other FSM readers? Send a brief description of the tool or technique and a black-and-white photo or a pencil sketch to FSM Tips, FINESCALE MODELER, 1027 North Seventh Street, Milwaukee, WI 53233. Please enclose a stamped, self-addressed envelope for return of photos. Tips are paid for upon publication.

**Decal storage I.** Office supply stores carry clear vinyl sheet protectors that are ideal for storing decals and their instruction sheets. The vinyl protectors are sealed on three sides, keep out excess humidity, and keep the decals flat. *Mark Elder*

**Decal storage II.** I keep my decals in a Tupperware Bacon Keeper. It's big enough to hold dozens of the largest aftermarket decals. The nearly airtight seal keeps out harmful humidity. *Brian Slipper*

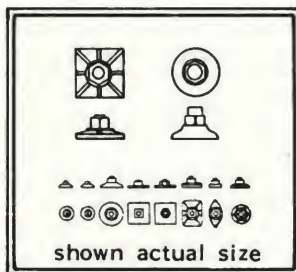
**Convenient trash bag.** For those of us who don't enjoy the luxury of a full-time workbench, cleanup at the end of a modeling session can be a chore. To make it a little easier, tape the long side of a large grocery bag to the edge of your workbench. It's easy to drop trash into it without fouling the floor or rug with litter. When you're finished working, just sweep any additional trash and dust over the edge of the table and into the bag. *Jack Clark*



**Wire glue applicator.** I use this home-made tool to apply single drops of super glue (cyanoacrylate). First, twist a strand of fuse wire (or any fine wire) to form a tiny loop. Next, cut the loop open with a knife. The loop will hold a small drop of super glue. When the drop is touched to the surface you want to glue, it flows out of the loop through the gap. *Giuseppe Bertocchi*

**Large sanding surface.** Building large vacuum-formed kits requires a large, flat sanding surface to rub down the extra plastic from the bonding surfaces of fuselage and wing halves. Instead of taping or pinning sheets of sandpaper to a board, try this: Check with local glass suppliers for salvaged 1/4" or thicker plate glass recovered from damaged store fronts. Small

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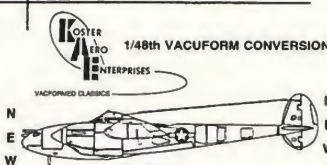
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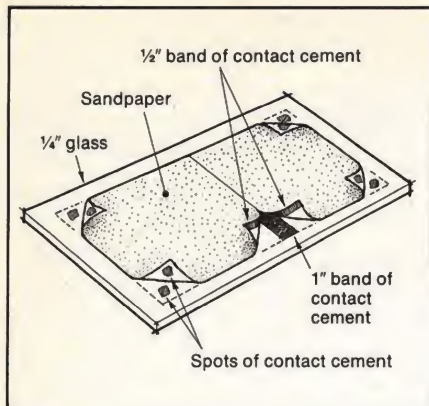
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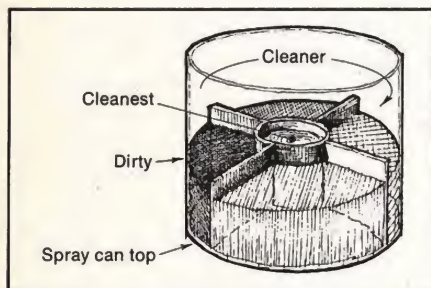


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*Fred Helmick*



**Spray can tops I.** Many spray paint can caps have reinforcing braces that divide them into four or more compartments. I pour paint thinner into each section and clean my brushes by removing most of the paint in the first bath and moving on to the next. The last bath is almost unpolluted. As I go full circle in the cap, the brush becomes progressively cleaner.

*Kurt Sladek*



**Spray can tops II.** I place the top of a spray can upside down on my workbench and use it to hold bottles of paint. The inner circle of plastic is just the right size for Testor, Pactra, Polly S, and other 1/2- or 5/8-ounce bottles.

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#### EVENTS

On-Con 1 Model Contest, September 7, 1985, Hampton Court, London, Ontario, Canada. Hosts are the London Plastic Modelers Society. IPMS rules in effect. For information contact John Magierowski, 764 Strand, London, Ont., Canada, N5Y 1S9.

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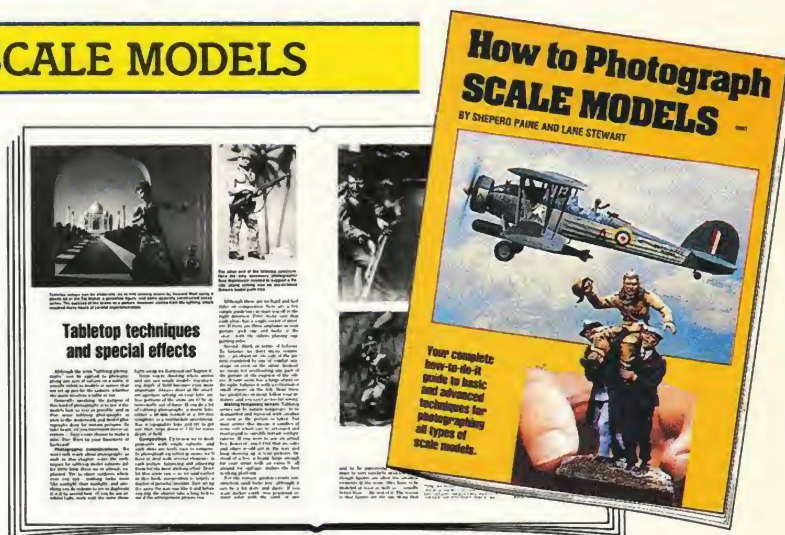
<b>A</b>		<b>E</b>		<b>N</b>	
A P C Hobbies	66c	Empire-Pacific Ltd.	2	NF Video	5
A T P, Inc.	27	Evergreen Scale Models	4	Northeastern Scale Models	66e
Aeolus Publishing Limited	10c	<b>F</b>		NorthWest Short Line	16
Aero Publishers, Inc.	15	FineScale Modeler	11, 17, 52, 53, 73	Nova Models	66e
Aero Research	36	1st Armored Model Supply Co	10d	<b>O</b>	
Alnavco, Inc.	26	Floquil-Polly S Corp.	34	The Old Guard, Inc.	62
Armor in Detail	66c	Paul Freiler's Historical Models	44	Ora Electronics	12
Arrow Hobbies	10f	A. J. Fricko Co.	4	<b>P</b>	
Atlanta Airbrush	66f	<b>G</b>		Plastic Military Models	46
Auto World	12	Grandt Line Products	68	The Plastic Place	10b
Aviation AV Library	14	Great Planes Models	66c	Polk's Model Craft Hobbies	34
<b>B</b>		Arthur S. Green	66c	Pony Toy Go-Round	65
Badger Air Brush	65	<b>H</b>		<b>Q</b>	
Bare Metal Foil Co.	69	Harold's Place	46	The Quartermaster	66a
Battle Hobbies	15	Heritage Ship Builders	66b	<b>R</b>	
Biggen Hill Publishing	4	Historical Hobbies	14	R E H Distributing Co.	10c
Binks Manufacturing Company	12	Hobbyland	5	Rareplane Detective	10e
<b>C</b>		Hobby House	66a	Repla-Tech International	10b
Cactus Air Force	8	Hugh's Aviation Prints	66c	The Rock Quarry	64
Canadian Float Plane	15	<b>I</b>		Riverside Hobbies	64
Castolite	52d	IPMS/USA	66a	Rosemont Hobby Shop	10a
Charleston Hobbies	43	I/R Miniatures	44	Ruelle's	66d
Clover House	9	Imported Specialties	26	<b>S</b>	
Combat Models	66b	International Historic Films	66b	San Antonio Hobby Shop	62
Combat Series	43	Island Model Craft Supply	27	Scale Aircraft Modelling	63
Creations Unlimited	66e	<b>K</b>		Sherrill Studio	4
Cush	8	Kalmbach - Books	67, 74	Sky Books International	7
<b>D</b>		Kalmbach - FineScale Modeler	11, 17, 52, 53, 73	The Spare Time Shop	4
D & J Hobby & Craft	66d	Kit Collectors Clearing House	9	Standard Bearer Miniatures	9
Densa Fine Art	66d	Krazy Glue	37	Strete Hobbies	10f
Des Plaines Hobbies	36	<b>L</b>		<b>T</b>	
Discount Hobby Center	48	Lencraft	10d	Taubman Plan Service	36
Dunbar Miniatures	46	Little Generals	10d	Testors	75
		<b>M</b>		Twentieth Century Imports	66
		Marco Polo Imports	8, 53, 70	<b>V</b>	
		Mascot	10e	Victoria Products	5
		Meta Models	69	Vintage Castings	10c
		Metalizer Products	69	<b>W</b>	
		Micro Mark	60, 61	War Eagle	68
		Mikerian Mercantile, Inc.	10a	War & Pieces	66a
		Mill Slides	10e	Warren Tool Co.	9
		Miniature Cars	66e	Warwinds International	53
		Brian K. Mitchell	66e	White Eagle	10f
		Mitchell Products	16	Williams Brothers	66b
		Model Expo	45	WWI Aero	16
		Model Expo Publications	66c	<b>X</b>	
		Model Rectifier	76	X-Acto	64
		The Model Shoppe	4		



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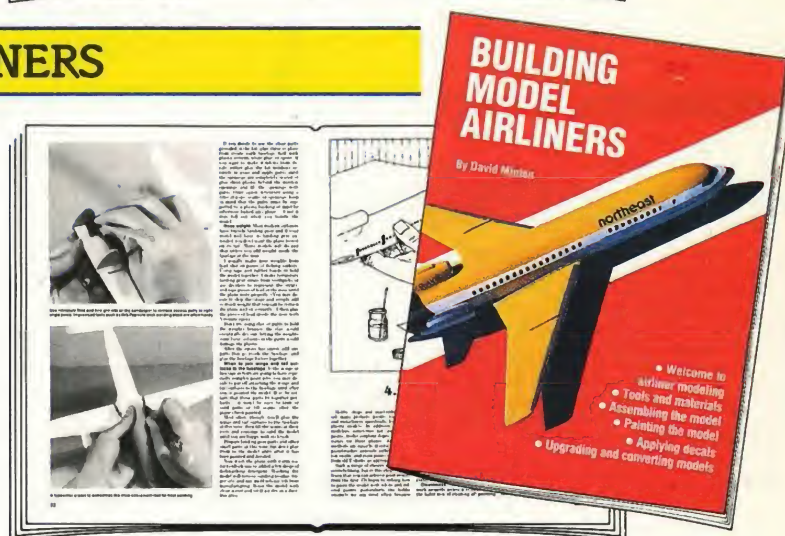
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